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Shri Bhishma Narain Singh, Governor of Tamil Nadu & Chancellor, speaking at the convocation of Mother Teresa Women's University. On his right is Dr. S. Lakshmi, Vice-Chancellor of the university. Others seen in the picture are Smt. Margaret Alva, Union Minister of State for Personnel, Public Grievances and Pensions, who delivered the convocation address, and Shri C. Aranganayagam, State Education Minister & Pro-Chancellor of the university.

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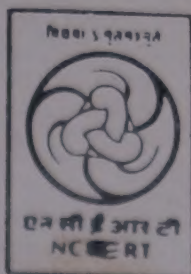
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IN THIS ISSUE

Higher Education :	
Constraints & Strains	4
Professional Development of Teachers	9
Futures in Higher Education	12
Convocation	
Mother Teresa Women's University, Madras	16
Campus News	
Development Information Network for South Asia	18
Rural Studies Centre at Kurukshetra Varsity	18
Railway Freights and Economic Development	19
Courses in Special Education	20
Agriculture	
Curriculum Development Project for TNAU	21
News from UGC	
Countrywide Classroom Programme	21
News from Abroad	
ICDL and Distance Education Database	22
Smuts Fellowship in Commonwealth Studies	22
Research in Progress	25
Theses of the Month	26
Classified Advertisements	28

Opinions expressed in the articles are those of the contributors and do not necessarily reflect the policies of the Association.

Editor :
SUTINDER SINGH

Magna Charta of Universities

M.S. Swaminathan*

On September 18, 1988, the University of Bologna in Italy commemorated its 900th Anniversary. On that occasion 450 Rectors and Vice-Chancellors from all over the world signed a "Magna Charta Universitatum". The Magna Charta stipulated the following three fundamental principles which must, now and always, support the vocation of universities.

"1. The university is an autonomous institution at the heart of societies differently organised because of geography and historical heritage; it produces, examines, appraises and hands down culture by research and teaching.

To meet the needs of the world around it, its research and teaching must be morally independent of all political authority and intellectually independent of all political authority and economic power.

2. Teaching and research in universities must be inseparable if their tuition is not to lag behind changing needs, the demands of society, and advances in scientific knowledge.

3. Freedom in research and training is the fundamental principle of university life, and governments and universities, each as far as in them lies, must ensure respect for this fundamental requirement.

Rejecting intolerance and always open to dialogue, university is an ideal meeting-ground for teachers capable of imparting their knowledge and well equipped to develop it by research and innovation and students entitled, able and willing to enrich their minds with that knowledge."

On September 18, 1992, 14 Vice-Chancellors of Indian universities signed this Magna Charta on the occasion of a special Indo-Italian symposium hosted by the University of Bologna. Dr. U.R. Rao and I were conferred honorary doctorate degrees by the University of Bologna on that occasion. My acceptance speech on that occasion is the basis of this article.

Long ago, the Roman Philosopher Seneca said "a hungry people listen not to reason nor cares for justice, nor is bent by prayers". Mahatma Gandhi expressed the same sentiment when he said "to the hungry, God is a loaf of bread". The television pictures we see daily now of starving children, women and men in Somalia testify the truth underlying the statements of Seneca and Gandhi. In 1964, Paul and William Paddock predicted a fate similar to "sheep going to a slaughter house" to the people of India by the year 1975. It may hence be appropriate to indicate the dimensions of India's accomplishments on the food security front.

The British colonial period began with drought and famine in Bengal in 1770, during which one-third of the population of the province perished. Just prior to the end of the colonial era, another great Bengal famine occurred during 1942-43, when about 3 million people died of hunger. Between 1770 and 1880, as many as 27 scarcities and famines were recorded. Twenty million lives were lost in about 20 famines during the period 1850 to 1900.

*Centre for Research on Sustainable Agricultural and Rural Development, Madras.

The population of the Indian sub-continent (including Pakistan and Bangladesh) was less than 300 million when great famines claimed numerous lives. The 1891 population figure of undivided India was 282 million. 10 million people died in a big famine in 1892. Today, the population of India alone is about 875 million and the population is growing by over 15 million each year. Yet, famines have been avoided since the country became independent in 1947. In 1965-66 food production was affected adversely by drought but there were no famines thanks to extensive food imports, largely under the PL 480 programme of the United States of America. Since the early seventies, the country prevented famines even during adverse weather conditions through a carefully designed food security system involving the maintenance of both substantial grain reserves and an extensive public distribution system. The foodgrain reserves were built largely from home grown wheat and rice, since from the late sixties, the rate of growth in food production generally exceeded the rate of growth of population. Timely imports both on concessional and commercial terms were made to replenish stocks in years when they were depleted due to widespread drought. By any standard, Independent India's famine avoidance strategy is a remarkable achievement. How did this happen?

The Strategy

Three major groups of factors were involved. First, farm men and women, whether literate or illiterate, took to new technologies with enthusiasm and efficiency, provided they were convinced that the change will help to improve their livelihoods and provided they were enabled to adopt them through appropriate public policies in input pricing and supply and output pricing and procurement.

Second, the country had the wisdom to invest on agricultural research and education and build a national grid of research institutions, agricultural, rural and womens' universities and grassroot level training organisations like Krishi Vigyan Kendras. Not only the Indian Council of Agricultural Research (ICAR), the national agency for agricultural research and education, but the entire scientific community working in the laboratories of the Ministries of Science and Technology, Environment and Forests and Commerce, and the Council of Scientific and Industrial Research (CSIR), Departments of Atomic Energy, Biotechnology, Space, Electronics and Ocean Development, Indian Council of Medical Research (ICMR) and general universities supported by the University Grants Commission did their best to assist rural areas with new technologies. International collaboration also helped much, particularly with institutions supported by the Consultative Group on International Agricultural Research (CGIAR). Experience has shown that without a strong and dynamic national research system, advantage from international research will be minimal. This was clear

from the rapid progress made in the country in wheat and rice improvement based on the initial material supplied by Dr. N.E. Borlaug from Mexico and by the International Rice Research Institute in the Philippines.

A third but vital contributory factor was government policies and programmes in rural techno-infrastructure development such as roads, irrigation, electrification and other forms of energy supply, extension services and markets. Land reform, remunerative pricing policies, credit supply, development of efficient extension services and various other forms of support to small and marginal farmers became possible due to political will and foresight and administrative action. In the mid-sixties, the country was fortunate to have Shri C. Subramaniam as Food and Agriculture Minister and Shri Lal Bahadur Shastri and Smt. Indira Gandhi as Prime Ministers, who were determined to make the country self-sufficient in food requirement. Administrators like the late Shri B. Sivaraman converted the political vision into practical programmes.

Thus, mutually reinforcing packages of technologies, services and public policies made it possible for farmers to make the country self-sufficient in foodgrains at current levels of purchasing power. By mid-seventies, the challenge shifted from physical to economic access to food. Inadequate opportunities for off-farm employment and inadequate attention to social organisation in rainfed areas with regard to saving and sharing water and to post-harvest technology, including biomass utilisation, led families without land or livestock or fish pond or trees remain under-employed or often unemployed. India's malnutrition problem thus became largely one of under-nutrition or calorie deprivation. It is estimated that over 200 million children, women and men living in poverty now suffer from chronic hunger. While famines have been avoided, chronic hunger persists and without jobs for all, this problem cannot be solved.

Sustainable Nutrition Security

Therefore, the challenge facing the country today is achieving sustainable nutrition security which involves physical and economic access to balanced diets and safe drinking water to all citizens. Only nutrition security at the level of individual households can ensure that children have an opportunity for the full expression of their innate genetic potential for physical and mental development.

India has now nearly 100 million operational holdings. 25% of the world's farmers are in India. India has also 20 percent of the global farm animal population. At the current rate of population growth, India will have over 1000 million people at the beginning of the 21st century. Compounding the problem of increasing economic marginalisation of the rural and urban poor, is the growing damage to the ecological foundations

essential for sustainable agriculture. Over 100 million hectares of potential farm land have undergone varying degrees of degradation. Even now, there is no policy for preventing the diversion of prime farm land for non-farm uses. The same is true of groundwater resources which are often being exploited in an unsustainable manner. Habitat destruction is leading to the loss of biological diversity. Protecting the already protected areas is proving to be a formidable task. In intensively farmed areas, biotic and abiotic stresses are increasing.

The challenge before scientists, political leaders and farmers is – how can agriculture yield more food, jobs and income in rural areas under conditions of shrinking land and fresh water resources, expanding biotic and abiotic stresses, loss of biological wealth and potential changes in climate, sea levels, and ultraviolet-B radiation? Sharing of research data, processes and products at the international level is also likely to be hampered in the future, due to the growing privatisation of applied research in industrialised countries.

Obviously, there is no simple or single solution to the complex ecological, socio-economic and technological problems facing those engaged in promoting sustainable advances in the productivity of terrestrial and aquatic farming systems. I can see no way of facing the scientific challenge except through accelerated efforts in the blending of traditional wisdom and technologies and modern technologies. The new technologies of particular interest to agriculture are biotechnology, information technology, space technology, micro-electronics and management techniques. Italian scientists like Prof. Umberto Colombo have demonstrated the value of technology blending in the textile industry. Italy has been so far the only industrialised nation which has promoted biotechnology research in the public sector through the International Centre for Genetic Engineering and Biotechnology (ICGEB) located at Trieste and New Delhi.

Sustainable agriculture will be possible only with location – specific technologies. Agenda 21 of the UN Conference on Environment and Development has stressed that a special anti-poverty strategy is a basic condition for ensuring sustainable development. Unless a pro-poor bias is imparted in technology development and dissemination, resource poor farm men and women will derive little benefit from the onward march of science, particularly in the area of biotechnology. This is where the initiative of the University of Bologna in forming a global consortium of universities committed to the improvement of the quality of human life within the carrying capacity of the supporting ecosystems is a timely one. We need similar consortia at the national level.

Bologna Magna Charta

The Bologna Magna Charta provides a new vision for partnership between universities and the societies

which support them. Obviously our first priority should go to solving the most serious problem of today, namely, the growing gap between the rich and the poor. UNDP's Human Development Report of 1992 indicates that over 82% of global income now goes to 20% of the human population. The poorest 20% receive only 1.4% of the annual world income. Such a deplorable situation is true both internationally and nationally and is the root cause of chronic hunger affecting over 600 million children, women and men. Unsustainable life styles and unacceptable poverty are both threatening the ecological security and social stability of our Planet. Expansion of ethnic conflicts and increased violence to both nature and fellow human beings will be the result of the widening income disparities among members of the human family. A combination of political will and scientific skill will be necessary to arrest and reverse this trend.

Let me illustrate what universities can do to assist in linking the ecological security of rural areas with the livelihood security of rural families by taking three examples from the work of the Centre for Research on Sustainable Agricultural and Rural Development, Madras.

First, to assist farmers to improve yield in a sustainable manner, a *Biological Software Centre for Sustainable Mixed Farming* is being established in cooperation with the Tamil Nadu Veterinary and Animal Sciences University at Kattupakkam near Madras city.

One Component of this Centre relates to assembling products and processes which can help to maintain/enhance soil health and productivity. The software would include items which can help improve the chemicals, physical and microbiological aspects of soil fertility maintenance.

Some examples of such software are :

- (a) Earthworm and Vermiculture
- (b) Nitrogen fixing trees and shrubs including stem nodulating species.
- (c) Rhizobial cultures, Azolla, Blue green algae.
- (d) Tree species like Neem whose seed cake promotes slow release of applied mineral fertilizer, and
- (e) Plants which help to control nematodes and soil pathogens.

The other components of this Centre would include gene pools for biotic stresses like pests and pathogens, veterinary pharmaceuticals of plant origin, medicinal plants and donors of genes providing tolerance to drought, floods, sea water intrusion and ultraviolet B-radiation.

(Contd. on page 15)

HIGHER EDUCATION

Constraints & Strains

D.A. Ghanchi*

The system of higher education in India is one of the biggest man-making enterprises in the world. We have now around 200 universities, both statutory and deemed, and about 7000 colleges of all sizes and shapes. A student population of nearly four million is being groomed into a adulthood by about 250,000 teachers. And the per capita investment in higher education ranges between Rs. 1500 and Rs. 5500 depending upon the type of course pursued by the student and the institution at which he studies. The expansion of the system after Independence has been almost astronomical.

Of course, the system has grown by way of an answer to the rise in demand, which by itself is the consequence of escalation of expectations on the part of the people. It indicates the faith that the people have come to repose in education as an instrument of change. Perceived thus, the increase in the demand for education, particularly higher education, is an indicator of a healthy civic attitude on the part of the citizens of a democracy, and therefore, deserving all the possible encouragement by the State. And happily, the State has tried to do this remarkably well over the years. Of course, by doing so, the State has incurred the charge which is not wholly unquestionable that, in the process, the primary education sector has received less attention than it ought to have.

In any social system, higher education has to have its due place inasmuch as it provides valuable inputs for intellectual excellence, innovation and leadership which are the basic ingredients for the advancement of society in the modern world. Since 1947, India's higher education has had this agenda to carry out. It indeed has been a stupendous task given the strains and constraints that have been squeezing the system relentlessly. In fact, all through the four and a half decades of India's independence, it has been a virtual struggle of survival as well as growth by the system with the squeeze hamstringing its endeavours on one hand, and the demands of development firing its imagination on the other.

One need not indulge in an evaluative exercise of determining which side won; rather one should make an objective survey of the operation of the twin forces of constraints and strains that results in the squeeze leading to a severe handicap on the process of healthy

development of the system of higher education in the country.

The Constraints

There are five major constraints on the system :

- (i) Philosophical constraints,
- (ii) Cultural constraints,
- (iii) Economic constraints,
- (iv) Operational constraints, and
- (v) Managerial constraints.

The philosophical constraints are subtle but very significant. The beliefs that we as a people of the East have about life, its purposes, and the goals of human existence very much shape our world view and our perceptions of the ends and means of shaping modes of life that should satisfy the inner craving for a supra-mundane realisation.

Superimposed on this essentially native, Indian approach to life and its meaning is the western outlook represented by the British model of higher education introduced in this country more than a century and a half ago, and continued after Independence. It is a historical truth that, though the exterior of the western educated Indian may have been partially westernised, the interior has, by and large, retained its original philosophical moorings.

This leads to philosophical schizophrenia, and it is visible in umpteen number of ways in the contemporary system of higher education. The confusion about the real national goals of education is an example. It is also reflected in our curricula and syllabi that have undergone many an outward change but have not acquired an unadulterated form, be it Indian or Western. The most painful phenomenon is the radarless shunting of the mind of the students and teachers who do not have an exact philosophical goal to approximate through their intellectual exercise.

This philosophical constraint underlies the psychomoral-intellectual vacuum the Indian higher educational scenario suffers from. The agonising part is its manifestation in the meaninglessness of the pursuit in the classrooms and on the campuses. This gets reflected in symptoms like agitations, strikes, work-to-rule movements, boycotts of examinations, etc.

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The cultural constraints are too obvious as witnessed in the peoples' attitudes to each other and towards their work. Anthropologically culture is a very powerful determinant of a person's perceptions of his roles as a member of society and the quality of the acquittal of his role.

We have a cultural heritage of at least five millennia which is both composite and particularistic at the same time. The secular and the sacred are intimately woven in our cultural fabric. The peaceable and violent both strands run through its texture. We have been susceptible to appeals ranging from savage to divine. The former has been more pronounced in our independent era leading to even acts of massacre perpetrated on weaker sections.

Education has been recognised as a potent acculturating force the world over. It is also recognized as liberating and empowering force. But, in order that it fulfils these missions, it must be allowed to operate in a cultural environment of freedom, fairness, and encouragement.

Unfortunately, we are a fractured society with innumerable inhibitions of caste, creed, region, language, gender and vested interests. Not a few decisions pertaining to higher education therefore, are influenced by non-academic considerations. They may be regarding the opening of a new university or a college, or instituting a new faculty or a branch of study, appointing a functionary or nominating a member on a body of a university, prescribing a course of study or recommending a textbook, and the list of such acts can be endless. It is these acts which vitiate our decisions and lead to academic miscarriages.

Take our attitude to work. The standards of performance that we have pursued so far, be they in classrooms, laboratories, examination halls on playfields and even in private academic pursuits have been in the neighbourhood of mediocrity, if not outright poor. The target of excellence has been a far cry in almost all departments of our academic life. The work culture that prevails in our academic world bears no relevance to the looming challenges of globalisation and market-friendly economy that are sought to be introduced in Indian life.

It is these cultural constraints that have dealt a crippling blow to the movement for injecting twin elements of autonomy of action and accountability for results in the system of our higher education. One observable consequence of this is the tardy pace of the implementation of the NEP (1986).

Our *economic constraints* are too well-known to need elaboration, for they affect all our development plans. Ours is a developing economy, still very largely dependent upon labour intensive primitive methods of production in millions of units scattered all over the country.

New technologies are a recent entrant into the field. The productivity of the average Indian worker is much below his potential thanks to multiple causes like poor training, low motivation and lack of appropriate technology.

Consequently, there is a low per capita income leaving little for saving and resultant investment. Whatever little surplus we produce is eaten up by soaring inflation, teeming population and increasing servicing charges of our foreign debt that has accumulated into billions. Social services, including education, have been the first victim of the economy drive in every budgeting exercise of the country.

We vividly remember the panic the recent cut imposed on the UGC grants to the central universities caused. We also know how the late release of even the partial grants to universities and colleges under the eighth plan has dislocated that process of development of higher education projects in them.

Resource crunch is not merely a piece of an economic jargon but it is a terrorising virus that can deliver a mortal blow to any working system of higher education very largely depending upon the state funds for its survival, let alone its development.

It is these economic constraints, among others, that have slowed down the process of qualitative improvement in areas of curriculum reconstruction, examination reform, teacher training, enrichment of infrastructural facilities, student services programme, open learning system, and R & D in higher education. It's a matter of grave concern for us as to how 40% of our colleges that are non-viable will ever acquire a modicum of resources that should justify existence as modest centres of higher learning. It's also a matter of equally serious concern how long the meritorious students from poorer sections will continue to be denied their fundamental right to education by being asked to pay capitation fees for admission and for subsequent continuance in the courses they are admitted to. Indeed, the curse of resource crunch is more devastating than even the divine curse for the gods above are more susceptible to human entreaties and prayers, and they have more bounties at their disposal than the state exchequers have!

The *operational constraints* are the products of human inadequacies. Students and their teachers constitute the core human resource of our tertiary system. They must operate effectively in their respective capacities in order that the primary aims of teaching and learning are realised.

The academic calendar, the courses of study, the programmes of activities, the schedules of examinations and convocation, and the entire interactive gamut of socio-academic life on and off the campus have to be operationalized at the maximum of the installed capacity of all with reasonable regularity, efficiency and commitment. This is the minimum rule of the game.

All the participants in the game have to help the operative process to function at the peak of its health and productivity. But, this does not happen. Break-downs, slowdowns, failures and sabotage are not uncommon, leading to tremendous wastage of time, energy and resources.

The reasons are many, in fact too many. Overcrowding of classrooms, admission of the unfit to colleges and universities, apathetic work force of teachers and para professionals, lack of communication among participants, vagaries of rules and arbitrary fiats, impersonal touch to the whole process of transactions in the classrooms and outside, are but a few glaring contributory factors that build up the operational constraints.

The managerial constraints that plague the system of higher education are a legacy of our colonial past that is ill at ease with the democratic present. For more than a century we have administered education through a culture of command and control at all levels. Participative management as a modern strategy adopted in industry and business is a recent arrival in the field of education. Its induction has been marked by apathy and reluctance, if not outright hostility.

The colonial system of administration generates mind sets that bank upon bureaucratic methods of running an organisation, be it a classroom, a team on the playground, a college faculty or a university body making decisions in respect of personnel, curriculum, examination, materials or finance. These mind sets die hard. They linger on the part of all, those that govern and those that are governed. One typical hang over of this mentality is the craving for a hero, one who takes decisions on behalf of all, executes, evaluates and rewards or punishes.

Modern management science values goals and objectives, plans programmes and strategies on them through participatory techniques, implements them through horizontal and vertical interaction, does collaborative evaluation and leads on to better corporate plans. It is this proactive management that is mostly missing from the system of resources on one hand and non-fulfilment of goals on the other, leaving in the trail a discontented, and frustrated human mass.

Unfortunately, these constraints persist in the system in one form or another and in varying degrees, setting at nought our plans like the NEP (1986) at the macro level and institutional plans for improvement and excellence at the micro level.

The Strains

While the system works under the five-fold constraints, it is also subjected to five-fold strains that further diminish its capability as an instrument of

development of the youthful human resource of the country. The strains are

- (i) Systemic strains,
- (ii) Demographic strains,
- (iii) Developmental strains,
- (iv) Political strains, and
- (v) Ethical strains.

These strains exert pressure on the already fragile system and threaten its very existence. Among these *the systemic strains* are built in the structural organisation of our higher education, which is characterised by the affiliating mode bequeathed by the British. It is strictly hierarchical and therefore, dependent upon a bureaucracy whose work style harks back to the colonial past.

When such a string of structures is exposed to democratic pressures, it generates forces of conflict and repression. Its built in inflexibility makes it irresponsive to contemporary concerns. The result is either a breakdown or a total failure.

Many a college and university in India has been experiencing these systemic strains and their first victim is the rule of law that must interrelate various subsystems into a cohesive organism. This does not happen very often, and so we witness the phenomenon of disintegration of the structure. One example of this is the cross purposes at which various constituents of a university or a college work.

The demographic strains are simply frightening, both quantitatively and qualitatively. Institutions and classrooms are bursting at the seams. The result is proliferation of number. It seems the rising tide is unpreventable because the population of the country is multiplying and newer sections of population are entering the precincts of higher education. And recently the Supreme Court of India having declared education of all levels a fundamental right of the citizen, the trend is likely to increase in the years to come.

Qualitatively the first generation learners are increasingly swelling the ranks of college-going population. Gender-wise women's participation is increasing at a greater pace. Region-wise, the hitherto unserved areas are establishing new universities and colleges in a large number. Specialized higher education institutions are also added to the fraternity.

This flood in number and diversity has put to considerable strain the age-old mechanism, its facilities and offerings. The first casualty of this demographic deluge is the quality of life on the campuses and the quality of education imparted there.

This leads us to the *developmental strains* of the system. Higher education is an organic system comprising several subsystems all of which are supposed to be welded into a coherent whole. This can happen only if the developmental process that goes on constantly is a healthy, multi-dimensional process of unfolding and, thereby, of growing healthily.

Because of the five-fold constraints described earlier, and the strains caused by the systemic maladjustments and consequent disorientation, the developmental process comes under severe strain. Take the chief task of teaching and learning which should, ideally, be a joyous experience of "being" overflowing into "becoming". It is virtually limited to a unilinear activity of coaching for passing a test and, thereby, earning a degree without undergoing a rigorous experience of intellectual renewal, of emotional fulfilment and of creative reinterpretation of self.

The development of the self of the youthful learner is perceived in a narrow mould of rote learning, thereby, ambushing the exciting adventure of his learning into a wasteland of truncated experience euphemistically called education.

Neither the teacher nor the student who is in a hurry to pass through the assembly line is concerned with this developmental tragedy he is passing through. Perhaps it is safe for both to maintain the status quo in order that they are spared from the sacrifices they would have to make for transforming the process of education into a rigorous encounter with one's self as well as with the environment of learning.

The *political strains* of a public system of education are unavoidable, for such education is both a product and a producer of political consciousness of democratic polity. All policy decisions pertaining to education have to be politically debated and derived. The implementation, monitoring and evaluation of these decisions also require people's involvement, and that also is the result of a vigorous political process of public discussion, dissent, decision and mobilisation.

However, it is the negative power-centered, manipulative politics that has exerted incalculable pressure on higher education. Such politics has brought in its wake elements of horse-trading, corruption and distortion of the normal process of law. Consequently, sources of political power and authority have been polluted. Quality of decisions in all matters, be they of appointment of personnel, nomination of functionaries, running of routine administration, organisation of instructional programmes, maintenance of discipline, placement of orders for goods and services, etc. has been adversely affected.

Naturally, politics devoid of values is a lethal agent for an organism like a university. Strains generated by such politics eat into the vitals of the system. The spectacle of the anaemic system of many a university and college in our country is an evidence of this lingering morbidity.

Lastly, the system of our higher education is facing numerous *ethical strains* generated by the social environment of contemporary India. The situation gets aggravated when crass self-interest of individuals as well as of pressure groups supervenes all considerations of law, decency and ethics.

Education is anti-social if it is unethical in conception, in planning and in execution. Students, teachers, managers of education and the community are bound together by certain unwritten codes of ethics. These codes have to be observed under a conscious, moral covenant entered into by various participants in the enterprise of education.

It is our experience since Independence that this covenant is observed increasingly in its breach. It is an impenetrable moral insensitivity that has come to mark our thinking and behaving with respect to higher education. This deliberate attitude strains the system at all levels, leading to an outright compromise on moral issues, whether they be of appointments, curriculum, teaching, discipline or examination.

Squeeze

Higher education in India is, thus, subjected to pulls and pressures of various constraints and strains. They apply a relentless squeeze on the system leading to deleterious consequences like the following :

(i) *Immobilisation* : The squeeze results in immobilisation of thinking as well as acting especially in critical moments. People prefer to be at a standstill rather than on the move, for it is safer to be static than take decisions, and act and undertake risk.

(ii) *Stagnation* : The result of immobilisation is stagnation. The system loses its steam and its joints get stiffened. It begins to accumulate dust and dirt metaphorically, and moves towards pathological state of pre-decay.

(iii) *Routinisation* : The system functions at only a survival level, ruling out initiative and innovation, and manages to carry on at a poor level of efficiency. There is an all round diminution of role and performance of excellence on the part of all.

(iv) *Ad hocisation* : Under a multifold squeeze the system makes do with ad hoc measures to meet with exigencies as and when they arise. There is very little of preplanned crisis management mechanism which is not possible under multiple constraints and strains. An air of *laissez faire*, therefore, pervades in all respects, which if not managed properly, tends to degenerate into semi-anarchy.

(v) *Bureaucratisation* : Education under constraints and strains ceases to be a professionalised system. Instead, bureaucratisation of all its modes of thinking and acting takes place, leading to impersonalisation, rigidity and dehumanisation.

Thus, the state of squeeze devitalises the organism, and at the same time gives it a false sense of survival. We cannot afford to keep our system of higher education in

such a state especially when the demands on higher education for tomorrow's India are changing fast in their range and quality.

Remedies

The Indian socio-cultural system has proved its resilience and capacity to renew time and again. There is no reason why our higher education system should not show the same response in moments of crisis. We need to muster our moral, spiritual and material strength to manage the crisis of squeeze in our higher education of today. Steps like the following can provide remedies to the ailments caused by the squeeze :

(i) *Moratoria* : Strains are caused by systemic disorders. We therefore, need a whole range of moratoria on the factors and forces that cause strains. These moratoria should be declared for a reasonably long period of time. They will cover all areas like expansion of number and size of institutions, proliferation of sub-standard institutions, agitations of all sorts, etc. There must be a will to exercise self-abnegation when the national interests are at stake.

(ii) *Prioritization* : Once moratoria assure peace and orderliness, we should evolve a feasible and realizable scale of priorities for a reasonable period, say till the end of the 20th century. These should again cover all the vital areas of system like goals of higher education, appropriate curricular inputs, teacher learner participation, research and development. Area-wise targets be also defined and strategies of implementation be laid down.

(iii) *Selective excellence* : Let's not aim at the sun, but keep our targets sufficiently high to motivate us to strive more persistently to seek and scale our appropriate peaks. Let's get out of the cocoons of mediocrity and realize standards of achievement comparable to those found elsewhere in our thoughts, ideas, decisions, actions, and even in failures.

(iv) *Alternative modalisation* : We have tried out for long just one mode of higher education, that of formal face-to-face teaching. There are other alternative modes of non-formal and open varieties, that address both teaching and learning. They offer more promises if tried out honestly and perseveringly.

(v) *Social insurance* : All educational endeavours need social support including political support. We need not fight shy of influencing the quality of political decision making in the country, for the direction, vitality and health of education depend, among other things, on those decisions. Let's welcome a rigorous, objective and very close social auditing in return of an enduring and effective social insurance for education. This would provide considerable protection against the strains that the system is undergoing and the constraints that tie down its manoeuvrability.

Conclusion

Education as a social enterprise needs certain qualities of character. We need courage of convictions

and a spirit of adventure. We also need to exhibit self-denial and self-sacrifice in our approach to enlightened self-interest. We need these especially in the context of our country where numerous constraints and strains make education a hazardous mission. It, therefore, requires on the part of everyone of us, the zeal and the dedication of missionary, nay even of a prophet. It is, therefore, pertinent to quote here from a judgment that the Delhi High Court delivered on 29th September, 1992 in a suit involving the leakage of a question paper meant for the entrance examination of the LL.B. Course of the university. The learned judge said, "We would recommend to the university the same road as recommended to the man who founded a new religion : Be crucified, and rise again on the third day."

The learned judge has eloquently and prophetically outlined the path that the universities in India should pursue to deliver their message to the generations to come, a message that will be as sacred as the religion that the great prophet gave the humanity about two millenia ago.

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Professional Development of Teachers

Orientation Programmes and Refresher Courses

R.C. Mehrotra*

Introduction

Although pedagogical training has always been considered absolutely essential for a teacher at the primary and secondary levels, the same has not been required for the lecturer beginning to teach at the tertiary level. Many reasons could be ascribed for this difference. The first one which comes to mind is that most of the teachers recruited for the university system possess a long research experience during which they might be expected to have imbibed the best method of acquiring the existing knowledge on a topic in such an intensive manner which could help them to advance it further by removing the possible doubts and providing a better perspective of the topic. Inculcation of 'Discipline with Dissent' is the most difficult task of a teacher at the tertiary level and these habits could be expected to be better generated through worthwhile research experience rather than through a form of pedagogical training. Another factor which in my view is more important than some pedagogical training for quality teaching at the tertiary level is a real grasp of the latest knowledge of the topic and the enthusiasm of the teacher in inspiring the students to learn more by creating an interest in the subject, by indicating simultaneously the possible doubts or alternative explanations.

In spite of all the above factors, the need for some type of pedagogical training for teachers at the university level has been felt rather strongly since 1950's. With the fast expansion of enrolment of students and opening of colleges in remote areas in a state like Rajasthan with often a single teacher department, the incumbent recruited for the job naturally often feels at sea as he has no example to follow and no senior teacher from whom he could even seek some guidance. Faced with such a situation, the Director of the College Education and the Dean of the Faculty in the University of Rajasthan to which all the colleges in Rajasthan were affiliated launched a collaborative 'Orientation Programme' for new teachers for 4-5 weeks to acquaint them with the general pedagogical requirements at the tertiary level and to give them some ideas of how to manage the facilities (for example, experimental work) particularly in a discipline of experimental science. The present author was even more shocked by the need for some sort of such training in the evaluation work by teachers in

1958 at Gorakhpur University. Having introduced internal assessment as a component of the final assessment of students at the M.Sc. Part I level, practice was adopted of getting the answer books evaluated by two internal examiners independently. However, the sporadic variation noted in the markings of the two teachers in the same department were almost unbelievable. Admittedly these were all young teachers who had joined the University without any teaching/evaluation experience but the habits once formed as exhibited in the above experience, tend to linger throughout life. However, as this aspect of teachers' training has not been emphasised from any quarter, the writer continues to be rather sceptical of our total evaluation system.

The teaching community even in advanced country like USA was shocked in late 1950's by the spectacular success of USSR in 1957. Realising the importance of having a close look at the curricula and teaching methods, a crash programme was initiated for the same in USA by involving the best authorities (even noble laureates) and efficient teachers to formulate a more invigorating curricula and writing textual materials in collaboration both for theory as well as for practical instructions. Although excellent guide books were also prepared, yet the need for an active teacher training programme to cope with the new ideology was not only realized but the programme was implemented in a surprisingly vigorous manner aiming at exposing all the teachers to new curricula in a particular discipline. A powerful body like the National Science Foundation took an active part in the whole programme which was followed on similar lines (albeit with some slight differences) in U.K. also.

In India, the programme of Refresher Courses was initiated by the NCERT for the school level and at the colleges/university level by the UGC through the mediation of an active officer Dr. B.D. Laroia who happened to visit many such centres in USA and UK during the early 1960s. This programme was actively pursued at least in the science subjects in a highly vigorous manner in 1960s throughout the country and the assistance of experts from USA and in some cases from UK was available for our programmes of Summer Schools held in different universities. Having participated in this programme by holding dozens of refresher courses in different fields of Science at the University of Rajasthan, a suggestion was made to the author by an eminent chemist Prof. King of North Western University who was deputed by the National Science Foundation for

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monitoring the programme in India that a stage had come to evaluate the impact of the programme in India also with a view to improve and strengthen it further in the coming years. Being convinced of the importance of the suggestion of Prof. King, I immediately rushed along with him to Prof. D.S. Kothari, the then Chairman of the UGC, who also in his usual enthusiasm accepted the suggestion and took steps for the same beginning with an Indo-US Seminar in Chemistry at Srinagar and Bangalore in 1969 followed by similar exercises in other disciplines of Science in the next 2-3 years. Excellent reports with highly valuable suggestions came out of these bi-national conferences but as often happens in our country, these reports have received very little notice and in fact even the valuable programme of refresher course for teachers was almost given up in the country during the 1970's, in spite of the ever-increasing need for the same all the time.

Enhancing Need for Refresher Courses

As a result of penetrating studies under the general heading 'Science of Science', it has been established on the basis of a number of statistical studies (e.g. the number of discoveries/papers published annually) that knowledge in every discipline is doubling itself exponentially and this 'doubling period' has been estimated to be as short as less than 5 years for fastly developing fields like Biochemistry and Biotechnology and about 10-11 years for disciplines like pure Mathematics. The impact of this new conclusion has not been generally fully realized by the academic community and I am, therefore, presenting a few figures in a little more detail. Assuming that knowledge in any field, say in 1950 was 1 Unit (arbitrary), then taking a sufficiently long 'doubling period' of 10 years, the knowledge in that discipline would be as below :

Total world knowledge in arbitrary Units	1950	1960	1970	1980	1990	2000
	1	2	4	8	16	32

The above table shows that whereas in 1950, the teacher/postgraduating student was expected to have command over 1 Unit of knowledge, his counterpart would have been expected to possess 16 Units of knowledge in 1990. This final figure is terrifying in itself but as the total knowledge is expected to become 32 Units in 2000 A.D., the knowledge during the decade 1990-2000 would be increasing at the average rate of 1.6 Units per year. This shows that for a teacher to remain upto date in his discipline, he will have to learn annually 1.6 times the total amount of knowledge which he himself or his counterpart was supposed to have mastered in 1950.

The above is certainly a very challenging situation and might appear almost impossible for an average individual on his own. It is in this perspective that often the qualification of any graduate/postgraduate is nowadays considered to become almost obsolete or incom-

plete within a period of 5 years and hence in addition to his individual continuing efforts particularly with the help of ever-increasing review articles, etc., it has become essential for some sort of refresher courses/training after every 5 years. This would apply equally well to professionals in any field of human activity but should be considered absolutely obligatory/inevitable for those in the teaching profession.

In addition to the above exponential growth in the quantum of knowledge, revolutionary advances have been taking place in the means of communication/dissemination of knowledge which have provided extraordinarily effective and novel techniques for the teaching/learning interactions. For example, besides the use of slides/projections and audio/video films etc., the capabilities of computers are becoming available in various forms. Fortunately, the students even at the school level in our country also are now being exposed to some form of training in the use of computers and hence, many of them are prepared mentally to take advantage of learning through this powerful facility, which is becoming more and more effective every day. As far as I am aware, very little emphasis, if any at all, has been given to these aspects of emerging 'Educational Technologies' in our refresher programmes for teachers and it is high time that attention is paid in such directions also.

Mehrotra Committee and Academic Staff Colleges

Having had the privilege of enjoying first hand thrill of such refresher programmes for a long time, the committee constituted by the UGC and the Government of India under the Chairmanship of the author, mainly for proposing changes in pay structure of the teachers at the tertiary level, reemphasized the need of refresher courses for the teachers in all the disciplines as a part of their professional advancement with a view to attract and retain the best talent in the teaching profession under the second term of reference for the above committee. It may, therefore, be appropriate to reproduce here some of the recommendations of the above committee on the topic of 'Professional Development of Teachers' :

"The Committee is of the view that at present our academic system seems to be unfair to the teachers insofar as it does not have a proper and comprehensive provision for their professional development. It is imperative to create opportunities for career and professional development of the teachers and provide incentives for good work. The following steps are suggested to attain this :

Orientation Programme for New Teachers

In view of the small annual intake of new faculty earlier, pedagogical/professional training was not considered essential or feasible for the teachers at the tertiary level; they were expected to get trained

on the job under the supervision of their senior colleagues. However, with the rapid increase in numbers and unplanned growth of colleges in far flung places and also in view of the fast developments in educational technology, a programme of orientation courses for the new entrants to the profession appears to be highly desirable. These courses (3-4 weeks duration) should be specifically designed for the new entrants before or soon after they start teaching. The main emphasis should be on developing methodologies of teaching in the concerned subject.

Refresher Courses for Teachers in general

Further, the extremely fast growth of knowledge in almost all disciplines has necessitated arrangements for refresher courses of longer duration (about five weeks). These should be so scheduled that every teacher is exposed to at least one course in a number of (say 5) years. These refresher courses should focus upon two main facets :

- (i) exposure to newer materials, and
- (ii) better ways of disseminating the existing and new knowledge.

A system should be evolved for mutual evaluation of the participants and resource personnel in the refresher programmes. Incentives like additional grants for preparation of teaching material and research could be provided for consistently excellent performance. The performance at these programmes should be considered at the time of promotion.

The organization of orientation/refresher programmes on the vast scale envisaged by the Committee must receive a very high priority by the U.G.C. in view of their crucial importance for raising and monitoring the standards of teaching.

The Indira Gandhi National Open University should be requested to provide for a variety of courses, in as many disciplines as possible, to encourage continuous self learning process amongst teachers. To enable the teachers to take advantage of such courses, the registration fees and other required inputs should be provided to them.

Participation teachers in seminars, symposia and conferences should be encouraged and facilitated.

Adequate facilities should be provided to teachers (giving preference to younger faculty) for study leave with pay and/or teacher fellowships etc., to enable them to pursue M.Phil/Ph.D. programmes, which should be strengthened and restructured so that these provide useful inputs in improving their capabilities as teachers."

Academic Staff Colleges and the Role of Distance Education

It is a welcome development that the Academic Staff Colleges have been established in 47 institutions. However, a continuous review of their functioning and achievements as well as points of weakness are essential in improving continuously challenging programmes of this type. For example, attention may be drawn towards a review of the orientation programmes of Academic Staff Colleges by M.M. Rahman and K. Biswal published on pages 11-15 in March 30 issue of the 'University News'.

It appears that the hands of IGNOU have been too full to give attention to the recommendations of Mehrotra Committee for providing leadership in the field of continuing refresher courses for teachers through the Distance Mode of Education. Naturally the other open universities in the states as well as the correspondence institutes of various universities have paid hardly any attention in these directions.

It is almost obvious that the distance mode of education is highly appreciated and could be much more effective in providing facilities to the teaching community to go on adding continuously to their vista of knowledge. Hopefully as reported for the Open University in U.K., its broadcasts and televised programmes have proved highly beneficial to many other sections of the society in addition to the students directly enrolled with the University. Although no survey has been made in India, yet it is to be expected that our teaching fraternity has also taken advantage of such programmes from the IGNOU as well as the UGC.

In view of the high multiplier effects of any improvement in the store house of knowledge of the teachers, it is high time that well planned programmes should be initiated through distance mode of education for the benefit of the teaching community both in pedagogical aspects as well as in the subject matter contents. This will have an additional advantage of providing a continuous learning programme for the teachers without the need of necessarily taking periodical leave for participation in the refresher programmes.

With the introduction of the distance mode of education, the face-to-face refresher courses could be of shorter duration and may be better focused around activities of the following types :

- (i) introduction of some difficult topics (like that of thermodynamics in Chemistry) by different participants and resource personnel, followed by a discussion of the effectiveness/weaknesses of the individual presentations – thus providing some form of so-called practice teaching in conventional pedagogical programmes;
- (ii) discussion on the current curricula, etc.; and
- (iii) working out together some new experimental instructions in the field of science and more relevant examples from relevant regional/national background in social sciences.

Futures in Higher Education

Prospects and Strategy

M.S. Sodha*

B.K. Passi**

Today is good time for exploring the preferred and possible futures of our society. It is also the time for taking a look at the futures of higher education and also to see which way the university education in general and our university in particular, would be advancing. We are mentioning a few points which at the moment may seem chaotic, but they are certainly of great importance as agenda for consideration to the perceptive mind.

1. One of the ideas that we are very keen to introduce is that we should try to *Export* our expertise in education, to all the neighbouring and far countries, who need it. One of the most undisputed capabilities in which Indians are very good at is teaching. We do have a galaxy of very good teachers. It is remarked by some of us that we might not have produced many quality products; we might not have shown excellence in research but as regards our teaching, it is generally agreed all over the world that we have something to give in the form of good teachers. The authors believe that we should use this talent for general welfare. We strongly feel that our university should set up new programs and institutes for all kinds of education including the professional. If need be, new institutions may be set up in collaboration with other universities and colleges or even local populace. These institutes can be located both in India and abroad. The establishment of the new institutions would earn a lot of goodwill for us from the neighbouring countries and will also support our own educational programs by bringing in revenue as well as valuable experience.
2. The futuristic higher education should introduce the popular concept of *life-long and continuing education for all*. Many commissions and people appreciate it but unfortunately noticeable action in the field is still awaited. Life-long education demands that our university must act as a vital agency for continuing education for all at all times. It would mean that a futuristic university should not

limit itself to the conventional needs of young professionals but should also provide for the emerging needs of elderly engineers, executives, administrative officers, and all other types of evolving professionals. The scenario of future occupations is going to change. The industrial and service sectors are expanding and transforming their own structures and functions. The management of increased diversity of human beings is going to monopolize future occupations. Therefore, one of the futuristic needs is management of intelligent and professional human beings. This demands that in the area of future management of people (particularly professionals), we should be proactive.

3. Through *modular approach* we should extend our educational facilities to all those who need it; these facilities may be organized both with or without academic credits. It may not be in the form of a full program. If a participant completes a certain number of modules, we can award a certificate, a diploma or a degree. And this facility need not be limited to the students of Indore or its vicinity. We can cooperate and collaborate with other institutions in providing this continuing education facility to any one, any where. For example, the practical part of many of such programs could be practised in the factory or the business offices itself, while the theoretical part can be undertaken as a lecture, as a tutorial, and or as a library exercise in the universities. The evaluation of the students, tutors, and the programs could be undertaken jointly. There is no reason why every credit and grade awarded has to be executed in the university alone. We should delegate responsibility and involve other collaborating institutions in this process of education.
4. The fourth point is linked with the concept of *area development* by the universities. It demands that the programs of a university should be linked with the soil on which it is placed. It cannot be accepted that an educational institution is exclusively serving extraneous goals beneficial to distant communities. The institution cannot function without its own time-space framework. For example, if by magic a university is shifted somewhere else in a different environment then obviously its programs have to be modified and transformed so as to serve the new

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milieu. It cannot continue doing the same old things for the same old community. Universities have to develop local sensitivity. This is the only way we come in contact with live problems. The development of society needs input for all kinds of problems starting with provision of services, implementation of programs, collecting feedback, designing refined technologies, and creating alternative options for development. The university could be involved in case the developmental programs are run either with the government help, or self-help or combination of both. The university should play its role in any of the forms and emphasis. We should involve our students and invite their contribution in the developmental programs. We should give them grades as far as their study courses are concerned. In fact, some of the educationists are emphasizing the introduction of such a novel concept of work experience which will lead to area development on one side and enhance the quality of higher education on the other. This point is important and looks feasible.

For example, in the MBA program of Devi Ahilya Vishwavidyalaya, the students are placed in a productive job, from day one. Apart from the developmental aspect of the job, the student gains a realistic perspective of the business environment. The student develops practical skills in the field and he conceptualizes the theoretical concepts in the classroom. Thus there is a live and continuous interaction between the real world and the academic world. The end result of all this is a better training which utilizes all the sophistication provided by a good classroom environment and the real experience that one gains in the field. Suppose, the field and classroom experiences do not go together, then the chances of interaction are reduced. One goes on adjusting and accommodating the two types of experiences. He becomes accustomed to existing realities.

5. Fifthly, we wish to propose a novel concept of *responsible networking*. We believe that networking in education, is very important especially when we are short of financial and human resources, and yet we wish to provide diverse programs. How do we go about? Suppose, we want to develop a responsible networking for offering a program in an interdisciplinary field. We may have to find a national laboratory, we may have a few volunteer industries, we may have cooperative universities which can collaborate to accomplish different components of a proposed academic program. We visualize that all these identified organizations will pool up their strengths, and try to award a degree by letting a candidate spend his time at different places. If the student does some thing by self-study, which is

creditable, we propose that he should have an opportunity to earn valid academic credits. We believe that the key to success of such a networking is flexibility. As long as we are sure that the student we are turning out is good, is useful to the society, has high intellectual flexibility to deal with a problem, we should not worry too much about what he has read and where he has worked. The only thing we should worry about is that the finished product is useful to the society. How it comes about should be certainly a very flexible exercise.

6. Sixthly, we are interested in the *autonomy* of the colleges and new types of association between the university and the colleges. Today one thing is very clear that the colleges or professional associations are affiliated with a university and not governed by the university. We believe in the equality of bidirectional relationship. We assert that there is no question of one directional relationship between these colleges and the university. The colleges should have their uniqueness and autonomy. The colleges must be autonomous both academically and financially. Along with this we have to make sure that the colleges can take complete advantage of the autonomy. We do not want an autonomous college to be a replica of a university. The autonomous college should not look like a mini university with its Principal being the Vice-Chancellor and its Head Clerk being the Registrar. The idea is that an autonomous college must be able to conduct educational experiments. The college must be able to come up with novelties. The college must be able to generate its speciality or provide a kind of training which is acceptable to the society.

However, we believe that nobody is academically autonomous till one is *financially autonomous*. If we depend upon the government then certainly the autonomy is very limited. We are governed by what the government officials or what the government in power thinks is important. And this may not match with what we think is important. So we have to build in a component of financial self support. Now how do we build it. There are different ways to find finances for attaining financial autonomy.

One way is that we increase the tuition fees to a moderate level, which means the fees should keep pace with the cost of living. The other way is that we try to develop new programs, which are job oriented, and professional in nature, and for which there is a demand. How do we go about? We keep certain seats available for some top meritorious candidates for whom the fee should be moderate. Then some other seats could be earmarked for eligible people, who would pay high fees. This group would include the NRIs, foreigners or the NRI supported Indians. If we do not provide such a facility, this group of students can always go

tation to them for higher studies in Sanskrit, Pali and Prakrit.

Dr. Maan Singh, Professor and Chairman of the Department and Dean, Faculty of Indic Studies was the coordinator of the programme.

Fellowship for Research in Computer Vision

A young Indian scientist has been granted a fellowship of \$500,000 for research to build machines that can see and recognise objects they have seen before even if the material is different.

Twenty-nine-year-old Dr K. Nayar will receive \$100,000 in each of the next five years from the David and Lucile Packard Foundation, USA to pursue research in computer vision and develop physical models for vision, sensors for shape and reflectance and algorithms for visual learning.

Dr Nayar, who got degree in electrical engineering from Birla Institute of Technology, Mesra, Ranchi, is researching a new theoretical approach which would allow a computer to recognise a three dimensional object it has seen before even if its lighting, position, size or material is different from the original.

Oxford & Cambridge Scholarships

The Oxford and Cambridge Society of India invites applications for scholarships for study at the Universities of Oxford or Cambridge beginning from October 1993. Applicants must hold at least a first class Honours degree or its equivalent from a recognised Indian University. This should be their first opportunity to study abroad. They should have obtained admission to one of the colleges of Oxford or Cambridge, to pursue a course of study leading to the degrees of B.A. (with senior status at Oxford, or affiliated status at Cambridge), M.Sc./

M.Litt./M.Phil or D.Phil./Ph. D. The scholarship amount, worth Rs. 50,000/- each will be paid into the Scholar-elect's bank account in India once he or she has joined Oxford or Cambridge.

The candidates are also required to submit (1) Attested copies of degrees obtained, (2) Certificate of age, (3) Medical Certificate, (4) Two passport size photographs, (5) An essay in 400-600 words (preferably typed) indicating the candidates academic and extra curricular interests and achievements, and the reasons for pursuing a course of study at Oxford or Cambridge, (6) Copy of letter of admission to a college in Oxford or Cambridge.

The Scholarship would be awarded on the basis of a candidate's attainments, potential for excellence and relevance of the course of studies chosen to later life. Candidates shortlisted would be invited for interviews to be held in Delhi in May 1993.

Application forms may be obtained by sending a self-addressed Re. 1/- stamped envelope (9" x 4") to the Hony. President, Oxford and Cambridge Society of India, 35-A, Friends' Colony (East), New Delhi-110 065. The last date for receiving completed Application Forms is 5th April 1993.

International Student Symposium at Ranchi

The Birla Institute of Technology, Mesra, Ranchi, recently organised an International Student Symposium. The symposium was inaugurated by Dr. P.N. Chakravarty, Director, NIFFT, Ranchi, while the keynote address was delivered by the Director Dr. J. Jha. The student counsellor Dr. Bendapudy Kantarao, presented the state of the art in the Electrical, Electronic and Computer areas.

The symposium was attended by more than 30 participants who

presented papers in the areas of Instrumentation, Neural networks, switched capacitor implementations, hardware implementation of fast fourier transforms, and software algorithms. All the papers were related to the project work being implemented by the student groups. Two papers were received from US.

Anna Varsity National Award

The Indian Society for Technical Education has announced the Anna University National Award for Outstanding Academic '92 to Prof. R. Vasudevan of the Metallurgical Engineering Department of the IIT, Madras. The Award will be made during the XXIII Annual Convention of ISTE, to be held in December 1993.

Course on River Basin Management

The Centre for Remote Sensing of Civil Engg. Department, University of Roorkee, recently organised a short term course on "River Basin Management using Digital Remote Sensing Techniques". The course was inaugurated by Dr. P. Mukhopadhyay, Pro-Vice-Chancellor, and attended by seventeen participants from various research Organisations and Institutions.

The objective of the course was to impart advanced knowledge and training in the subject area with emphasis on application of latest remote sensing techniques in the field of water resources management.

We Congratulate.....

Dr. M.G. Muthukumarasamy who has been appointed Vice-Chancellor of the Annamalai University, Annamalai Nagar.

Sir Chhotu Ram Memorial Lecture

Shri Dhanik Lal Mandal, Governor of Haryana and Chancellor of Chaudhary Charan Singh Haryana Agricultural University (CCSHAU) recently inaugurated the Sir Chhotu Ram Memorial Lecture at the university. Paying his humble tributes to the memory of Sir Chhotu Ram, the Governor said that low prices of agricultural produce was a major problem for the agriculturists today. He advocated the provision of incentive to the agriculture sector on the basis of industrial sector. He also released a book entitled Rural Development and Prosperity and a souvenir brought out on the work and ideology of Sir Chhotu Ram.

On this occasion, Dr. M. Wazid Khan, Prof. of Plant Pathology, Aligarh Muslim University, was awarded Sir Chhotu Ram National Award in recognition of the useful research work done by him in the field of rural development. In his work, Dr. Khan identified several nematodes resistant varieties of cereal crops and vegetables and suggested the new techniques for the elimination of powdery mildew, a common disease affecting the vegetables.

Dr. S.S. Johl, Prof of Eminence and member of Prime Minister's Economic Advisory Council, delivered Sir Chhotu Ram Memorial Lecture entitled New Economic Policy and Structural Adjustments in Agricultural Sector. In his lecture Dr. Johl said that under the existing agrarian sector where 79 percent of the farmers occupy less than 4 acres of land, it becomes imperative on the part of the agricultural scientists to devise the technologies which are beneficial for the small land holders. He said that unless and until internal weaknesses of the farm sectors were not removed, the benefits accruing of the new

economic policy would be of no use to the rural land holders. He suggested several reforms in the agrarian structure and desired that a School of Rural Development should be established in the name of Sir Chhotu Ram.

The Vice-Chancellor, Dr A.L. Chaudhry, highlighted the steps undertaken by the university to commemorate the memory of Sir Chhotu Ram. He resolved that the university scientists would continue to strive for the cause of rural develop-

ment on lines with the ideology of Sir Chhotu Ram.

Agricultural Varsity at Imphal

The Central Government is reported to have issued a notification for the setting up of a farm varsity for the north-eastern region at an estimated cost of Rs. 64.30 crore.

The proposed university, to be located at Imphal in Manipur, would be set up on the pattern of State agricultural universities in the country with integration of teaching, research and extension education.

The university will have its campuses in Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Sikkim and



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Qualification & Experience: (a) Master's degree (55%) in Personnel Management & Industrial Relations or Economics (b) Masters's degree (55%) in Social Work with specialisation in FCW or in a generic programme with field work or work experience preferably for 2 years in this field.

Outstation candidates called for interview will be paid TA as per rules. The candidates will be given admissible relaxation in tests/ interview performance and experience

Prescribed application form along with detailed information giving qualifications/experience requirements/general instructions can be obtained from the Assistant Registrar (Personnel) either in person or by post by sending an application along with a self-addressed envelope and a copy of the caste certificate. The crucial date for determining age limit and length of experience is 19-3-1993. The last date for issue of application form is 1-3-1993. Completed application forms together with copies of certificates should reach the Assistant Registrar (Personnel) on or before 19-3-1993.

Dr. S.K. Bandyopadhyay
Registrar

Thy Worst Enemy

"I would like to ask how many of our educated women even today treat their sons and daughters equally in their families. How many of them get their sons and daughters married without dowries after all their education? In fact the more educated the son the higher the dowry that the mother claims; nobody else. Who is the one who creates the maximum problems for the daughter in law in the family? We talk of dowry deaths. Where are the educated women in our families who are prepared to stop this crime against women?" asked Mrs. Margaret Alva, Union Minister of State for Personnel, Public Grievances and Pensions. Mrs. Alva was delivering the Convocation Address at the fifth annual convocation of Mother Teresa Women's University, Madras. Excerpts

Look at this situation particularly of women around our country today. Almost 45 years after Independence, we still have illiteracy, malnutrition, exploitation and discrimination, Offences of rape, dowry deaths, violence in the home and outside. Repeated child births, over work and neglect of their health care requirements puts them amongst the highest mortality rates in the world for women and lowest literacy figures for them. Do we really feel concerned? Do we as young educated women after our research, our studies and all over examinations feel and are prepared to be involved? Do we have the courage to be counted among those who have to strive to change the situation for women around us, around the world but most of all in our own country. There are two diametrically opposite views about women which are repeatedly expressed in this country. One view is that women are weak, they need to be protected. They must be kept at home. They must be looked after. In the tradition of Manu, she is the daughter, the wife, the mother to be protected, to be looked after and to be cared for. The other is – we worship them. We make them into goddesses – we have Lakshmi, we have Durga, we have Saraswathi, we have them all. What more do you want? You are the goddesses we worship. I have repeatedly been saying the

reality is neither of them. All that happens is that we are either made into stone statues and expected to be the perfect women that they would like us to be or in the name of protecting us we are exploited. I was in Nagaland sometime ago, in connection with an election campaign. I spent three weeks there and I used to go into the villages, down the hill sides and up, and day after day I used to watch people coming back from the fields; the woman in front, a baby tied on her back, a bundle of wood on her head, vegetables in a bag in one hand and other requirements in the other hand walking up the hill side with the man walking behind her with the stick to support himself. After seeing this for many days, I one day got down from the Jeep and I stopped a couple and I said to the man, are you her husband? 'Yes' he said very proudly and I said is that your child, he said 'yes'. I said you watch this weak woman, your wife carry all that burden and walk up the hill side while you walk empty handed with a stick to support you. Is that fair? and he turned round to me and said 'yes, my hands have to be free to protect her from danger'. This is what I say has been the theme of protection of women;

that in the name of our being weak we have always been exploited.

Friends, we have the Constitution, we have the guarantees, we have legislation, we have any amount of reports, I heard about all the research projects that have come out of this university, we have commissions – now the National Commission for Women, we have family courts, we have the development corporations, we have well, you name it and we have it in this country. We have tried to create an infrastructure in which women can be protected, can be helped, can move forward. The New Education Policy which was the dream child of our late Prime Minister, Rajiv Gandhi, and the theme which he insisted on was education for equality because the equality that we talk about in the Constitution does not start with education. There are boys and girls who are given an equal opportunity and taught right from the beginning that they are equal, that there could be no change in society outside. And yet with all these thousands of young women who pass out of institutions of higher learning today, what is happening? Have they brought about much of a change in our social thinking in our living or even in our attitudes within our families. After almost 45 years of planned development – how much of the benefits have gone to women. In what way have their lives really changed? This is the question perhaps which sitting in this beautiful Hall in this famous University of Tamil Nadu, I would like to ask not only you but the women of this country? Where have all our educated women gone? Why do we go out of our institutions and still believe in retaining this status quo? It is because we are afraid? Is it because we are indifferent or is it because we have never really thought about it? Each one of you goes out with the lamp that is lit in the darkness around you. Do realise your responsibility as educated

women coming out of institutions like these.

We still have millions of our sisters who can't read a line, who can't sign their names, who can't read a post card may be from their husband or their sons somewhere far away. The meaning of literacy and the empowerment of women are something which have to be understood and which have to be appreciated. I would like to ask where are all those bright young scientists, engineers, doctors, sociologists, women research people whom we have produced. Yes, many of them are struggling in many places. The best perhaps have gone abroad, many many more have gone out and are satisfied with falling into line and carrying on with their lives. I would like to ask how many of our educated women even today treat their sons and daughters equally in their families. How many of them get their sons and daughters married without dowries after all their education? In fact the more educated the son the higher the dowry that the mother claims; nobody else. Who is the one who creates the maximum problems for the daughter in law in the family? We talk of dowry deaths. Where are the educated women in our families who are prepared to stop this crime against other women? What had happened to the development of science and technology. The development of science is leading to the destruction of the female foetus by the mother herself through the most modern scientific methods. Do these women consider it their duty to be involved in any kind of activity that can help to change the lives of other women around them? I would like to ask how can we expect to change the situation for women unless we edu-

cate women ourselves are prepared to stand up and be counted. To speak out from the heart; to work and be followed. I do not say that every one of us has to be a Joan of Arc. or a martyr on some platform. Each one of us is called upon as an educated woman whose mind has been freed, to whom knowledge has come to look at life with a new angle, with a new commitment, with a new perspective. If education is just passing examinations, coming to a Convocation and going away with beautiful pictures of yourselves on your convocation day carrying your degrees home and then framing them and then saying.... I have finished my studies, thank God, now I can rest in peace. If that is the attitude, I think as I said at the beginning, all the efforts of all these distinguished women and men who have spent their time training and educating you perhaps has been a lesson in futility. Therefore, I would say to you please understand the meaning of your education. Free your minds from the bonds and the shackles of ignorance and of many

traditional beliefs which have no value today. I am not saying that all tradition is to be given up; I do not say that copying the west is the answer to our problems. I have always condemned these practices. But I believe that one has got to have the courage sometimes to question certain things which we have accepted for too long as part of our Karma or part of our life. The time has come for us to ask how can things change, of who will change them and then decide whether or not each one of us is called upon to be instruments of change.

Therefore I would say to you young women go forth as women of courage and conviction; of commitment and compassion; as women of character worthy of this great institution, your alma mater in a spirit of service and sacrifice. Be prepared always to pay the price, if you must, but be agents of change and instruments of women's liberation. Only then will you be worthy to be called the daughters of this great institution and the makers of a new India.

University News
Wishes
Its Readers
A
Happy New Year
1993

Development Information Network for South Asia (DEVINSA)

Mr. Pranab Mukherjee, Deputy Chairman, Planning Commission, recently inaugurated a workshop on the Development Information Network for South Asia (DEVINSA) Database, Regional Cooperation, Resource Sharing and Networking at the Jawaharlal Nehru University. Over 100 delegates representing various institutions engaged in the socio-economic studies, newspapers and information data centres participated in the workshop.

In his address Mr. Mukherjee stressed the importance of cooperation among South Asian countries for the overall development of the region and said that DEVINSA which was involved in creating a database on socio-economic developments could play an important role in strengthening cooperation among the countries in the region.

Mr. Mukherjee said that knowledge and socio-economic development were inseparable and the application of scientific, technological and social information was the key factor, which determined the progress of a nation. He said that the network could provide its users much more and timely information on current development activities in South Asia in order to bring about greater collaboration between researchers and avoid duplication of efforts.

Mr. Mukherjee expressed the hope that in the workshop, a number of new ideas would emerge on technical and management issues which would enrich the functioning of the DEVINSA programme.

The JNU Vice-Chancellor, Professor Yoginder K. Alagh, who presided over the function, said the JNU administration would try to provide all possible help and support required for the project.

The Development Information Network for South Asia (DEVINSA) was set up to develop a database bibliographic information on socio-economic development in the South Asian countries and to provide services from it. The network presently covers Bangladesh, India, the Maldives, Nepal, Pakistan and Sri Lanka but will eventually include the others too.

One of the main purposes of establishing this network and creating the database is to bring into bibliographic control unpublished literature produced in the South Asian region on the broad area of social and economic development. Thus the main focus is on documents such as conference reports, reports to government and other development agencies, published and unpublished articles, theses, dissertations, research reports, working papers and technical reports, which seldom get into bibliographic control. Even though few of them may eventually be published, there is bound to be considerable time lag. In addition, relevant documents published locally and elsewhere are also included.

Rural Studies Centre at Kurukshetra Varsity

The Kurukshetra University has established a Rural Studies Centre with the assistance from the UGC to conduct researches for the development of Rural areas. The UGC has given rupees 5 lacs to start the centre in the first instance.

The Centre will conduct studies to achieve the following objectives : (1) To make efforts for the upliftment of rural people particularly rural poor and weaker sections of

rural society; (2) To activate the participation and involvement of rural communities in different rural development programmes; (3) To conduct studies of various rural development programmes and find out their weaknesses; (4) To prepare models for village level planning and administration for the development of rural areas; (5) To establish linkages with different developmental agencies/departments including voluntary organisations for rural development; (6) To collect data, information and learning material relating to rural development; (7) To conduct action oriented research relating to the needs and problems of rural sector; (8) To run the courses on rural development, Panchayati Raj and democratic decentralisation; (9) To assess the impact of irrigation and land reforms on rural development; (10) To know the pattern of interaction between politics and development administration at village level and their impact on development; (11) To study and find out the causes of rural poverty and unemployment and suggest measures to overcome them; and (12) To impart training to the functionaries involved in rural development programmes.

Low Cost Chemical Instrumentation

A one-week workshop/Refresher Course on Low Cost Chemical Instrumentation for University teachers from South Asian Countries was recently organised by UNESCO in collaboration with the Centre for Professional Development in Higher Education, University of Delhi. The workshop was inaugurated by Professor Upendra Baxi, Vice-Chancellor, Delhi University. Mr. J.V. Kingston, Director, ROSTSCA and UNESCO representative to India presided over the inaugural session of the workshop. Delegates from Bangladesh,

Bhutan, Maldives, Sri Lanka and India, participated in the programme.

The salient features of this programme were to acquaint the participants with the basic principles of electronics, its applications in designing circuits for low cost instruments, handling and maintenance of these equipments which are cheap, versatile as well as safe. The workshop was followed by educational visits and orientation to use of computers in chemical education. Participants were given due opportunity for handling the computers themselves.

One of the important aspects of the UNESCO Projects is the dissemination of the Locally Produced Low Cost Equipment (LPLCE) knowhow at the international level through systematic teacher training programmes, and curricular changes. Participation of teachers and students ensures that the equipment is tailor made for different requirements, generates confidence and expertise in instrumentation. These equipments and training programmes are essential inputs for developing science culture as well as for the improvement of science teaching in developing countries. Such programmes have been conducted in more than 30 countries including India.

To coordinate the activities of different centres and to extend the geographical and academic scope of the work done so far, UNESCO has now set-up and International Network for LPLCE.

UNESCO, UGC, CPDHE and University authorities extended due cooperation for successful completion of the course. The LPLCE network will be expanded in U.P., Maharashtra, and Karnataka under the leadership of Prof. K.V. Sane, Chairman, IUPAC (CTC).

Railway Freights and Economic Development

A two-day seminar on 'Rail Transport Pricing and Economic Development' was recently organised jointly by Jawaharlal Nehru University (JNU) and Railway Fare and Freight Committee (RFFC), Ministry of Railways. Delivering the keynote address Dr. Y.P. Anand, Chairman, Railway Board, emphasised the need to generate internal resources by the railways, particularly due to the declining budgetary support from the Planning Commission. He argued that the rates for various services must be based on appropriate costing. He also emphasised the need for improvement in managerial efficiency and facilities for R&D developed within the country.

Prof. Y.K. Alagh, Vice-Chancellor, JNU, who presided over the inaugural session, highlighted the distortions in the regional structure of the country due to the wrong pricing policies adopted by the railways. He welcomed joint research ventures of different schools of the university in collaboration with government bodies to make research more meaningful.

Dr. Nanjundappa, Chairman, RFFC recognised the complexity in determining the freight and fares due to the need of mobilising resources, and meeting the social obligations. Prof. Amitabh Kundu while introducing the seminar argued that the Railways must share the responsibility of curbing inflation and reducing regional disparity by carrying certain essential commodities at subsidised rates particularly during the period of economic liberalisation.

The seminar deliberated on the issues relating to pricing of bulk goods traffic, general goods traffic, passenger traffic, suburban services etc. and considered different sug-

gestions for meeting the increased demand for current and capital expenditure.

Special Literacy Camps

NSS Co-ordination Cell of the Gujarat Vidyapith organised a fifteen-day Special Literacy Camps in 8 villages of three talukas of Gandhinagar, Dholka and Dahegam of Ahmedabad and Gandhinagar districts. 95 NSS volunteers, 85 local youths and 50 teachers joined these camps.

The village panchayats, co-operatives, schools and local women and youth groups were actively involved in programmes of the camp.

Creating awareness of the people in development programmes under 8th five-year plan, conducting adult literacy, post-literacy campaigns, organising health check-up of the people and cleanliness campaigns, demonstrations of constructing low cost toilets and Bio-gas units, construction of soak-pits and smoke less chullas, were the main features of these camps. The students also explained advantages of Sardar Sarovar Project of Narmada River in the context of removal of acute scarcity of drinking water.

In concrete terms following targets were achieved :

- 2,500 illiterate adults attended cluster based literacy classes run by the NSS volunteers.
- 750 literate adults attended post-literacy classes.
- 1,500 saplings planted.
- 2,690 farmers attended lectures, demonstration and guidance sessions on low-cost agricultural technology; animal husbandry; live-stock care; better methods of grain storing; documentary films, slides and cultural programmes.

- 1,250 women of the nearby villages participated at 3 women meets held on women empowerment; women literacy; Population education & environment sanitation.
- Rs.1,85,000 worth earth work, road repairing, playground levelling, removing encroachments and sanitation facilities.
- 105 Soak-pits constructed.
- 16 variety entertainment cultural programmes held involving mass audience from the nearby villages.

National Library Week

Satyanand Stokes Library of the Dr. Y.S Parmar University of Horticulture & Forestry, Solan (H.P) organised the books and Paintings Exhibition on the occasion of 8th National Library Week. The exhibition was inaugurated by Dr. B.R. Sharma, Vice-Chancellor of the university.

In this exhibition, paintings of children of various age groups from 3-4 to 15-16 years from many countries of the world were displayed. The exhibition also included books for children, books and other reading material on different disciplines especially – Forestry, Environmental Sciences, Ecology, Horticulture, Floriculture, Computer, etc. The original paintings were received from the Children Book Trust of India on returnable basis from its collection of international competition – which it organises every year for the children of the world.

CEC Fellowships 1993-94

The Department of Science and Technology invites applications for Post-Doctoral Fellowships offered by the Commission of the European Community for 1993-94 to provide

the selected Indian scientists and technologists with an opportunity to work in frontier areas of science and technology and to familiarise themselves with the latest development. The applications have been invited from qualified Indian scientists, residing in India, for carrying out research work in laboratories/Institutions of the member states of the European Community. The subject areas include (1) Agricultural Science (2) Biotechnology (3) Chemical Sciences (4) Engineering Sciences (5) Environmental Sciences (6) Earth, Atmospheric and Marine Sciences (7) Life Sciences (8) Physical and Material Sciences (9) Mathematics & Computer Sciences (10) New and Renewable Sources of Energy.

The application forms can be obtained from the Section Officer, International Division, Department of Science & Technology, Technology Bhawan, New Mehrauli Road, New Delhi-110016. The last date for submission of application forms by registered post is 15 January, 1993.

Meghnad Saha Award for Prof. Agarwal

Prof. Girish Saran Agarwal of the School of Physics, University of Hyderabad, has been awarded the 'Meghnad Saha award for research in theoretical sciences' of the Hari Om Ashram Trust for his outstanding work in the area of quantum optics. He has been successful in predicting a number of rabi type linear and non-linear resonances in the laser cavity radiation which have been checked later by experiments.

Courses in Special Education

The Department of Special Education, S.N.D.T. Women's University, Bombay has introduced Teachers' Training Courses for

teaching the handicapped for women graduates. The courses are B.Ed. (Spl. Edu.) – Full time one year course; M.Ed. (Spl. Edu.) – Full time one year course; and P.G. diploma in learning disability – Part time one year course.

The application form for admission will be available in the department from January 20, 1993 and entrance examination and interview will be held in March 1993.

Further information may be obtained from the Department of Special Education, S.N.D.T. Women's University, Juhu Campus, Bombay - 400049.

Science & Islam

The University of Kashmir recently organised a three-day seminar on Science and Islam. The objective of the seminar was to provide an opportunity to young students to understand Islam and its relation with Science.

Inaugurating the seminar, Prof. Hamidi, Vice-Chancellor, said that Islam had contributed a lot for the development of modern science. Prof. Qazi Ghula Mohammad in his keynote address explained the contribution of muslim scientists especially in the field of Mathematics. Papers presented at the seminar included: Modern developments in life science viz-a-viz Islam; Use of some medicinal plants by Prophet (SAW); Contribution of Muslims in the development of medicine; Scientific methods and Islam; Ghazzali and Natural Sciences; and Islam and Evolution of Science.

The seminar recommended that the university be requested to introduce a paper on Islam and Science in Science Faculty.

News from Agricultural Universities

Curriculum Development Project for TANU

The Ford Foundation is reported to have chosen Tamil Nadu Agricultural University for the Curriculum Development Project. The purpose of the scheme is to improve the curriculum with changing conditions and make it more meaningful.

Mr. Robert Macadam, Director, Extension and Rural Development Centre of the University of Western Sydney, Hawkesbury in Australia, who has been chosen by the Ford Foundation for the purpose, recently visited the Agricultural College in Madurai and some of the research stations attached to it. He said that the Foundation had identified eight or nine universities in the world and TNAU was one among them. It was the only university chosen for the purpose in India.

He said they would link all these universities on a programme basis

and improve the curriculum so that the subjects taught would be on the basis of programmes like commercial agriculture, environmental agriculture, integrated farming system, etc. Under the scheme there would be exchange of teachers and students between the various Universities listed by the Ford Foundation and the Tamil Nadu Agricultural University.

The Ford Foundation was interested in improving the progressive agricultural universities in different parts of the world. There were possibilities of linking various farm universities with countries like the Philippines, Thailand and even with South Africa and Egypt. The Ford Foundation was at the moment concentrating on India. The farm university in Tamil Nadu had been doing impressive work.

News from UGC

Countrywide Classroom Programme

Between 15th January to 21st January, 1993 the following schedule of telecast on higher education through INSAT-1D under the auspices of the University Grants Commission will be observed. The programme is presented in two sets of one hour duration each every day from 1.00 p.m. to 2.00 p.m. and 4.00 p.m. to 5.00 p.m. The programme is available on the TV Network throughout the country.

Ist Transmission

1.00 p.m. to 2.00 p.m.

15.1.93

"Tall Fathers and Short Sons – I Regression"

"Eutrophication"

"Imbibing Global Ecology – A Unique Experiment in Learning"

16.1.93

"Puppetry for Play – I"

"Musical Notes and their Origin"

"The Week Ahead"

17.1.93

No Telecast

18.1.93

"Facing the Future – I"

"General Agreement on Trade and Tariff – II"

"Hospital Management in India"

19.1.93

"Organic Techniques – I"

"Unveiling Antarctica"

"Conjoined Twins"

20.1.93

"Energy Management"

"Burial Mound at Sekta"

"New Techniques in Fish Culture"

21.1.93

"Computers Around us"

"Trouble Shooting Techniques"

"Sanskrit Studies in Pune"

IInd Transmission

4.00 p.m. to 5.00 p.m.

15.1.93

"Geometry made Simple"

"Women in Development : Malshiras – A Case Study"

"Footnotes"

16.1.93

"Theatre in Society – II Free Theatre"

"Within Frame"

"The Week Ahead"

17.1.93

No Telecast

18.1.93

"Electromagnetic Induction"

"Innovation : Antarctic Paradox"

"Poseidon"

19.1.93

"The Halogens"

"Adieu to Body Fat"

20.1.93

"Fire Retardant Thatches"

"Natural Lagooning"

"History of Indian Jewellery – II"

21.1.93

"Buried Treasure : Silver"

"Bilingualism in India & Abroad"

News from Abroad

ICDL and Distance Education Database

The International Centre for Distance Learning (ICDL) is a documentation centre based on the campus of the Open University in the United Kingdom, specializing in collecting and disseminating information on distance education worldwide. With a grant from the British Government's Overseas Development Administration, ICDL has now developed a comprehensive computerized database on distance education for the Commonwealth of Learning, an organisation created by Commonwealth Heads of Government to improve opportunities for students in commonwealth countries through distance education.

The database contains information on: Distance-taught programmes and course in the Commonwealth (over 20,000 entries); Distance teaching institutions worldwide (over 550 entries); and Literature of distance education worldwide (over 4000 entries).

The database can be accessed by subscribers: Online by connecting to the Open University computer in the United Kingdom – available 24 hours daily; Obtaining a compact disc from ICDL. New compact disc releases are prepared every four months.

The user interface is identical for both online and compact disc versions.

Online and compact disc versions are in widespread use. Many users are connecting to the online service via networks such as Internet as well as IPSS and direct dial. VT100 compatible terminal software is all that is necessary for online use. The CD-ROM version requires an IBM compatible computer with at least 512k RAM, a connected CD-ROM player and a printer (optional).

Further information can be obtained from Dr. Keith Harry, Direc-

tor, ICDL, c/o The Open University, Walton Hall, Milton Keynes, MK7 6AA, UK.

Smuts Fellowship in Commonwealth Studies

The Managers of the Smuts Memorial Fund invite applications for a Smuts Visiting Fellowship in Commonwealth Studies for the academical year 1994-95. The tenure of the Fellowship will be for one year from 1 October, but the date of the commencement of tenure may be altered by the Managers by not more than a few months to suit the convenience of the person appointed. The Fellow will be expected to reside in Cambridge during the major part of the tenure of the appointment and to advance Commonwealth Studies in Cambridge, mainly by pursuing research, but also by participating in the teaching work of the University. The interests of the Managers of the Smuts Memorial Fund embrace Commonwealth-related aspects of the following fields: archaeology and anthropology, economics, history, human geography, law, literature, oriental studies, and social and political sciences. The Editorial Board of the Cambridge Commonwealth Series will consider publication in the Series of suitable work

produced during the tenure of the Visiting Fellowship.

The emolument of Visiting Fellow will be a sum to be determined by the Managers, after taking account of his or her other resources, up to £6,000. The Managers will be prepared to consider awarding additional emoluments on the basis of financial and family circumstances. They may also, after considering the Fellow's resources, reimburse part or all of the cost of travel to Cambridge and back. Applicants for the Fellowship should be members of the staff of another university or other suitably qualified persons. Preference will be given to promising younger scholars who are nationals or permanent residents of the overseas countries of the Commonwealth who have a record of substantial research experience, including a Ph.D. Degree or equivalent qualification.

Applications should include the names of three persons to whom reference may be made and may be accompanied by not more than two testimonials. They should contain a curriculum vitae, list of publications, details of the proposed work to be undertaken in Cambridge, and details of the applicant's probable financial resources for the period of tenure of the Fellowship. They must be sent to the Secretary to the Managers of the Smuts Memorial Fund, 4 Mill Lane, Cambridge, CB2 1RZ, so as to reach him not later than 31 May 1993.



INDIAN COUNCIL OF PHILOSOPHICAL RESEARCH

Rajendra Bhavan, 4th Floor,

210, Deen Dayal Upadhyaya Marg,

New Delhi-110 002

FELLOWSHIPS 1993-94

Applications are invited for the award of Senior Fellowships, General Fellowships, Junior Research Fellowships, Short-term Fellowships, Residential Fellowships & Fellowships for Preparing Learning Material from eligible scholars.

Details of the fellowships and the application forms can be obtained by sending a self-addressed Rs. 3.00 stamped, 25 cm x 11 cm envelope to the Director (P&R) on or before 30.1.1993. The completed applications should reach him by 28.2.1993. The Council reserves the right to consider the name of any person for the award of a fellowship though he/she may not have applied.

davp 92/518

Doctoral Research in Indian Universities

This refers to Dr. ANP. Ummerkutty's article entitled 'Raising the Quality of Doctoral Research in Our Universities', published in the *University News* of October 26, 1992. The author has very well pointed out that Ph.D. works belong to the category of junior level research. Of course, most of these research works are carried out for the purpose of getting a degree. In order to get over various ailments of doctoral research the author has suggested publication of the summaries of research contributions by the concerned universities. Also, the author has very well said that Calicut University is going to make such a venture by publishing the substance of a thesis in 3-4 printed pages.

The proposed effort and suggestions of the author are quite praiseworthy. But simply publication of thesis may not improve quality of research in the universities. Perhaps it is a well known fact that in most of the disciplines 'Survey of Research' are published at the national or international levels, where a synoptic view of research work of an individual is published. But this has not ensured quality research at Ph.D level. The researchers do not become conscious or better researchers simply when they get their works published. There are a large number of reasons for this deplorable state of affairs. Foremost is that Indian researchers are problem blind. The research problems selected by them are generally irrelevant, trivial and non challenging. The research studies so undertaken describe only existing status. Further, the completed research yields findings which are already known or perceived. This practice is disappointing and does not help to generate knowledge to build a sound policy or practice at

any level. A large number of such ailments can be counted by anyone who is connected with research programmes in the universities. The problem, even lies with the failure of many editors of research journals or books to insist that quality of research be necessary condition for publication. No guidelines have ever been planned for universities or research institutions for reviewing the research reports or articles. If at all, some guidelines exist these suffer from many limitations. All this has made research programmes in the universities a lopsided affair.

Therefore, apart from publication programme, the universities should follow certain precautions and make a concerted effort by introducing some changes in their management so as to help knowledge generation programme.

First and foremost thing is to prepare research leaders through rigorous training. These leaders have not only to be sound in research methodology but also should have insight to perceive problems in their respective disciplines. The training programme should be a regular feature in each faculty by organising certain activities. The activities may be : (a) to have regular research seminars for the doctoral students and the staff. The research proposals may be placed before the forum like this; (b) Talks by guest speakers on research should be arranged occasionally. It will make researchers visualise the problems to be investigated in their respective fields; (c) There should be a provision for departmental libraries to be managed by the research staff. The library should remain open for late hours in the evening and early hours in the morning so that the researchers can benefit from the

library; (d) A self-evaluation of the institution should be done every year by studying the growth of research output and viewing the trend of research done in the department. Again, after every five or six years evaluation should be done by outside experts and the same should be discussed for improvement with the staff members or research guides; (e) Mini-seminars should be organised at micro-level in the departments. The mini-seminars may be organised on weekly basis by the teacher and the research scholars guided by him. In such seminars free exchange of ideas between budding researchers will take place without the fear of leg pulling, (f) The professors or visiting fellows of the universities should be invited to different departments so as to have interaction with the research scholars on the issues concerning a discipline. This will help in developing interdisciplinary research. It can be further strengthened if the staff and researchers of different departments meet in the portals of a particular department on various issues concerning a discipline. All this and lot more can be done to provide rigorous training to the neo-researchers in the universities.

Secondly the forum of researchers and educational leaders of a university and nearby research institutions should occasionally meet to discuss 'what research says to the consumers' on various issues. Wherever they feel that research studies are handicapped to recommend anything substantial, the same may be highlighted by showing gaps. Such a document, should later on be circulated among various universities and research institutions.

Thirdly, the UGC with the help of faculty members of various universities should develop an evaluation proforma for evaluating a research project by the examiners.


The report of the examiners of a Ph.D. thesis should be prepared on the basis of this proforma. This report must also be published along with publications of thesis. It will be good if both these appear in the 'Annual Report' of a university at the time of granting a degree.

These are some of the suggestions to improve upon quality of research in the universities in India. But it never means that quantitative growth should be stopped. After all,

quantity breeds quality, and theorisation in any field depends upon data. Above all, what is required is a consciousness on the part of the researchers as well as educational leaders like Vice-Chancellors, Chairpersons of apex bodies, etc. to improve upon quality of research in the universities. It is only through concerted ventures and time-to-time reviews that research can provide useful and practical solution to various problems in the

country. Perhaps, Dr. Ummerkuty's words need to be repeated that it is difficult to give exhaustive suggestions here, but discussions and seminars can help in improving upon present state of affairs in Ph.D. level research.

S.P. Malhotra,
Reader,
Department of Education,
Kurukshetra University,
Kurukshetra.



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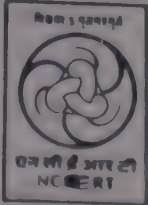
a) Any of the REGIONAL COLLEGES OF EDUCATION at Ajmer, Bhopal, Bhubaneswar or Mysore

b) Any of the NCERT FIELD ADVISERS at : (1) Zoo Tinali Road, Sahib Tila P.O. Bamtunimaidan, Guwahati 781 021; (2) 128/2, Kothrud Karve Road, Pune 411 029; (3) P-23, CIT Road, Scheme 55, Calcutta 700 014; (4) Sai Krupa Sadan, Below Forest Colony, Khalini, Shimla 171 002; (5) Awanti Nagar Colony, Bashir Bagh, Hyderabad 500 029; (6) Kothi No. 72, Sector 19-A, Chandigarh 160 019; (7) 1-B, Chandra Colony, Behind Law College, Ahmedabad 380 006; (8) Boyce Road, Laitumkhra, Shillong 793 003; (9) 555-E, Mumfordganj, Allahabad 211 002; (10) MIG-161, Saraswatinagar, Jawahar Chowk, Bhopal 462 003; (11) 108, 100 Feet Road, Hosakere Halli Extension, Banashankari III Stage, Bangalore 560 085; (12) Homi Bhabha Hostel, RCE Campus, Bhubaneswar 751 007; (13) Kankarbagh, Patrakar Nagar, Patna 800 020; (14) 64, IV Avenue, Ashok Nagar, Madras 600 083; (15) SIE Campus, P.O. Poojapura, Thiruvananthapuram 695 012; (16) 2-2A, Pustak Bhawan, Jhalana Doongri, Jaipur 302 004; (17) Jammu & Kashmir Camp Office, Jammu 180 005.

c) State Council of Educational Research and Training (SCERT) or State Institute of Education (SIE) in YOUR OWN STATE.

The papers should be sent at the following address and NOWHERE ELSE.

The last date for receipt of papers is 25 January, 1993.



Head
Department of Teacher Education & Special Education
National Council of Educational
Research & Training
Sri Aurobindo Marg, NEW DELHI 110 016.

davp 92/472

RESEARCH IN PROGRESS

A list of Research Scholars registered for Doctoral Degrees in Indian Universities

PHYSICAL SCIENCES

Mathematics

1. Rajarajeswari, R. Semigroups of operators. Kerala. Dr K S S Nambodiripad, Prof and Head, Department of Mathematics, University of Kerala, Kariavattom.

Statistics

1. Anil, V. Integrated Cauchy functional equation and its applications. Kerala. Dr R N Pillai, Prof and Head, Department of Statistics, University of Kerala, Kariavattom.

Physics

1. Anand, Suruchi. Laser spectroscopy of semiconductors/oxide materials. Delhi. Prof S L Gupta, Department of Physics and Astrophysics, University of Delhi, Delhi and Prof K P Jain, Head, Department of Physics, Indian Institute of Technology, New Delhi.

2. Arora, Charu. Correlation functions in condensed systems. Delhi. Dr S P Tiwari, Prof, Department of Physics, University of Delhi, Delhi.

3. Awasthi, Anita. Nuclear interaction in quark model. Delhi. Dr V S Bhasin, Prof, Department of Physics, University of Delhi, Delhi.

4. Gupta, Seema. Electrical properties of glasses. Delhi. Prof Abhai Mansingh, Department of Physics, University of Delhi, Delhi.

5. Jayant Kumar. Signals from the quark cluch plasma. Delhi. Dr J D Anand, Department of Physics, University of Delhi, Delhi and Dr A K Goyal, Department of Physics, University of Delhi, Delhi.

6. Mazumdar, Indranil. Study of the nuclei (proton rich) far away from the line of beta-stability. Delhi. Prof V S Bhasin, Department of Physics, University of Delhi, Delhi and Dr A K Sinha, Senior Scientist, Nuclear Science Centre, New Delhi.

7. Naithani, Jaya. Planetary boundary layer studies over India and Antractica. Delhi. Dr K M Aggarwal, Vallabh Patel Chest Institute, Delhi and Dr H N Dutta, Scientist-E, National Physical Laboratory, New Delhi.

8. Pathak, Saurav. Transport properties of high density hadronic matter. Delhi. Prof Jai Dev Anand, Department of Physics, University of Delhi, Delhi and Dr V K Gupta, Department of Physics, University of Delhi, Delhi.

9. Shashi Shekhar. Study of possible signatures of quark-gluon plasma. Delhi. Dr Yogesh Kumar Mathur, Lecturer, Department of Physics, University of Delhi, Delhi.

10. Singh, Sachchidanand. Middle atmosphere: Dynamics study of gravity waves in the middle atmosphere. Delhi. Dr O P Nagpal, Department of Physics, University of Delhi, Delhi and Dr K K Mahajan, Deputy Director, National Physical Laboratory, New Delhi.

11. Suri, Minnu. Quark gluon plasma at finite temperature and density and some applications. Delhi. Prof Jai Dev Anand, Department of Physics, University of Delhi, Delhi.

12. Talwar, Shubhra. Plasma astrophysics. Delhi. Prof V B Bhatia, Department of Physics, University of Delhi, Delhi.

13. Tiwari, Sanjeev Kumar. Non-linearity and chaos in plasma. Delhi. Prof M P Srivastava, Department of Physics, University of Delhi, Delhi.

14. Tripathy, Sunil Kumar. Group theory. Delhi. Prof R P Saxena, Department of Physics, University of Delhi, Delhi.

15. Veēnadhari, B. Low latitude radio communication. Delhi. Dr Narinder Nath, Reader, Department of Physics, University of Delhi, Delhi and Dr (Mrs) D R Laskhmi, Scientist E, National Physical Laboratory, New Delhi.

16. Verma, Dharmender. Electric and magnetic properties of diluted magnetic semiconductors. Delhi. Dr Shah Nawaz, Lecturer, Department of Physics, University of Delhi, Delhi.

Chemistry

1. Dhawan, Mukta. Trace metal interactions in vivo on hepatic heme catabolism in rats. Delhi. Dr Ramesh Chandra, Department of Chemistry, University of Delhi, Delhi.

2. Dubey, Manoj Kumar. Corrosion inhibition. Delhi. Dr Gurmeet Singh, Department of Chemistry, University of Delhi, Delhi.

3. Nehria, Lata. Transition metal complexes with tridento ligands. Delhi. Dr Pawan Mathur, Department of Chemistry, University of Delhi, Delhi.

4. Pati, Hari Narayan. Biotransformations and chemistry of natural products. Delhi. Dr V S Parmar, Department of Chemistry, University of Delhi, Delhi.

5. Rohira, Bharti. Corrosion inhibition. Delhi. Dr Gurmeet Singh, Department of Chemistry, University of Delhi, Delhi.

6. Sahay, Ranjana. Studies in heterocyclic compounds. Delhi. Prof V K Ahluwalia, Department of Chemistry, University of Delhi, Delhi.

Engineering & Technology

1. Abdul Jaleel, T K. Some aspects of modification of Al-Si alloys. Kerala. Dr R M Pillai, Scientist and Head, Department of Mechanical Engineering, Regional Research Laboratory, Thiruvananthapuram.

2. Ramabhadran Nair, V. Investigations on soot formation kinetics during combustion of hydrocarbons. Kerala. Dr K Thyagarajan, Kani, Kailas Gardens, Sreehariyam, Thiruvananthapuram.

BIOLOGICAL SCIENCES

Biotechnology

1. Seema Kumari. Interaction of E M waves with biomaterials. BIIU. Dr N Mishra, Department of Biotechnology and Dr S P Singh, Department of Electronics Engineering, Institute of Technology, Banaras Hindu University, Varanasi.

Botany

1. Chrungu, Babeeta. Pollen biotechnology for rassica improvement. Delhi. Prof K R Shivanna, Department of Botany, University of Delhi, Delhi.

2. Dass, Preeti. Ecological studies in nitrogen removal from domestic waste water through ammonia volatilization, nitrification and de-nitrification in land application methods. Vikram. Dr S K Billore, Reader, School of Studies in Botany, Vikram University, Ujjain.

3. Gaddam, Eji Babu. Phytotoxicity and interactive effects of cadmium with zinc and manganese and uptake, translocation and accumulation in *Abelmoschus esculentus*. Vikram. Dr V P Singh, Prof, School of Studies in Botany, Vikram University, Ujjain.

3. Gutch, Arti. Studies on certain aspects of seed dormancy and germination in *Hygrophila auriculata*. Vikram. Dr D Amritphale, Reader, School of Studies in Botany, Vikram University, Ujjain.

4. Jain, Nisha. Assessment of few tropical trees against air pollutants. Vikram. Dr P S Dube, Prof and Head, School of Studies in Botany, Vikram University, Ujjain.

5. Khujneri, Sanjay. Stress tolerance potential and defence strategy against air pollutants. Vikram. Dr P S Dube, Prof and Head, School of Studies in Botany, Vikram University, Ujjain.

6. Mehrotra, Vandana. Reproductive biology of Indian *Gracilaria* (Rhodophyta) from Port Okha. Delhi. Prof M R Vijayaraghavan, Department of Botany, University of Delhi, Delhi.

7. Padmakumari, B. Induced mutations in *Coleus parviflorus*.

Kerala. Dr K Ramachandran, Director, Academic Staff College, University of Kerala, Kariavattom.

8. Rasta, A P. In vitro studies on some crop plants. Delhi. Dr S D Bhojwani, Reader, Department of Botany, University of Delhi, Delhi and Dr P S Ganapathy, Department of Botany, University of Delhi, Delhi.

Zoology

1. Raghuwanshi, Mahendra Singh. Studies on the neuro-secretory cells of brain and ventral nerve cord of *Ropalidia marginata* during metamorphosis. Vikram. Dr J P N Pathak, Prof, Department of Zoology, Madhav Science College, Ujjain.

2. Saxena, Pankaj. Pre-impoundment studies on Western Zone of Narmada with special reference to macrozoobenthos. Vikram. Dr Sharad Shrivastava, Reader, School of Studies in Zoology, Vikram University, Ujjain.

3. Shukla, Arvind Nath. Limnological studies on Gandhi Sagar Reservoir with special reference to macrozoobenthos. Vikram. Dr Sharad Shrivastava, Reader, School of Studies in Zoology, Vikram University, Ujjain.

4. Sunil Kumar. Limnological studies in Gandhi Sagar Reservoir with special reference to oxygen and thermal regimes. Vikram. Dr K S Rao, Reader, School of Studies in Zoology, Vikram University, Ujjain.

5. Varghese, Johnson. Protection of some target organs in mice against inorganic mercury poisoning with a herbal compound: A histological study. Vikram. Dr H S Rathore, Lecturer, School of Studies in Zoology, Vikram University, Ujjain.

THESES OF THE MONTH

A list of Doctoral Theses accepted by Indian Universities

PHYSICAL SCIENCES

Mathematics

1. Govinda Rao, Potnuru. Some features of harmonic waves in imperfectly bonded sandwich plates. Andhra.

2. Gupta, Seema. Some fluid distributions in spherically and allied symmetries in general theory of relativity. Roorkee.

3. Mandal, Subhas Chandra. Some mixed boundary value problems in elastodynamics. NBU.

4. Pawan Bala. Operator algebras of finite strict multiplicity. Delhi.

5. Venkateswarlu, Kolluru. Brouwerian vector spaces. Andhra.

Statistics

1. Shah, Narendrakumar Chandulal. Some contributions to sampling schemes and estimation procedures in survey sampling. Patel. Dr D N Shah, Prof, Department of Statistics, Sardar Patel University, Vallabh Vidyanagar.

2. Thannippara, Alex. On optimal block designs for comparing test treatments with a control. Saurashtra. Dr D K Ghosh, Department of Mathematics and Statistics, Saurashtra University, Rajkot.

Physics

1. Amanullah, F M. Preparation and characterization of fluorine doped tin oxide (FTO) and tin doped indium oxide (ITO) thin films: Application to gas sensors and heat mirrors. Osmania.

2. Gulati, Ramesh. Optical effects in MESFETS. Delhi.

3. Gupta, Ratnesh. Low temperature studies of some disordered alloys. Devi Ahilya. Dr Ajay Gupta, Head, Department of Physics, Devi Ahilya Vishwavidyalaya, Indore.

4. Havalgi, Mohan. Study of electrical and magnetic properties of solids. Saurashtra. Dr R G Kulkarni, Prof and Head, Department of Physics, Saurashtra University, Rajkot.

5. Koka, Subbaravamma. Fluctuations in type-II superconductors. Hyderabad. Prof K N Shrivastava, School of Physics, University of Hyderabad, Hyderabad.

6. Majumdar, Bhabani. Quasi normal modes and time delay of signals in curved space-times. Delhi.

7. Makhan Singh. Behaviour of gamma ray interactions in composite materials. Punjabi. Dr Gurmeh Singh, Lecturer, Department of Physics, Punjabi University, Patiala.

8. Pallah, Baljit Singh. A study of trace elements in biological and environmental samples using nuclear techniques. Punjabi. Dr H S Sahota, Prof, Department of Physics, Punjabi University, Patiala and Dr V K Mittal, Lecturer, Department of Physics, Punjabi University, Patiala.

9. Ramesh Babu, Yagateela. Multispectral solar radiation extinction studies over Waltair. Andhra.

10. Tiwari, Sanjay. Studies on the mechanoluminescence of gold doped (Zn Cd) mixed phosphors. Durgawati. Dr B P Chandra, Prof, Department of Physics, Rani Durgawati Vishwavidyalaya, Jabalpur.

Chemistry

1. Ananthapadmanabhan, P. Theory of charge transfer reactions in condensed media. CUST. Dr K L Sebastian, Prof, Department of Applied Chemistry, Cochin University of Science and Technology, Kochi.

2. Anitha, P. Studies in the formation and oxidative cyclisation of N-aryl-N',N''-bis (heter-2-yl) guanidines. Osmania.

3. Baldev Raj. Studies in azomethines: Synthesis of new heterocyclics. Punjabi. Dr K K Singal, Reader, Department of Chemistry, Punjabi University, Patiala.

4. Baljit Singh. Electrochemical synthesis of cadmium and mercury compounds. Punjabi. Dr Jagtar Singh, Reader, Department of Chemistry, Punjabi University, Patiala.

5. Basu, Krishna. Studies on the kinetics and mechanisms of formation of hydroxamate complexes of vanadium (V) and molybdenum (VI) in solution. Calcutta.

6. Chakraborty, Amit Ranjan. Analytical studies on some environmental pollutants. Ravishankar. Dr R K Mishra, Prof, School of Studies in Chemistry, Pt Ravishankar Shukla University, Raipur.

7. Gohil, Narendrasinh B. Synthesis, reactivity and structural elucidation of metal organic compounds. Bhavnagar. Dr S N Mishra, Prof and Head, Department of Chemistry, Bhavnagar University, Bhavnagar.

8. John, Koshy. Computation of spectral parameters from absorption difference and comparative absorption spectra of Neodymium (III) complexes in solution. Bhavnagar. Dr S N Mishra, Prof and Head, Department of Chemistry, Bhavnagar University, Bhavnagar.

9. Kashyap, Rekha. Structural elucidations of the chemical constituents of some medicinal and non-medicinal plants. Delhi.

10. Khwaja Zuber Alam. Some physicochemical studies on adsorption and ion exchange. AMU. Dr K G Varshney.

11. Padmaja, K V. Study of some potential petrocrops for liquid fuels. Roorkee.

12. Patel, Jayeshkumar Nathubhai. Synthesis, characterization and microbial studies of polyketone resins. Patel. Dr R M Patel, Reader, Department of Chemistry, Sardar Patel University, Vallabh Vidyanagar.

13. Paul, Pradip Chandra. Studies on peroxo and fluoro compounds of vanadium and arsenic and a new route to monovalent metal compounds. NEHU. Dr M K Chaudhuri, Department of Chemistry, North Eastern Hill University, Shillong.

14. Rama Devi, A. Studies directed towards the synthesis of anticoccidial and antitumor compounds. Osmania.

15. Sahu, Balaram. Physico-chemical studies of some mixed hydroxylapatites. Sambalpur. Dr A Panda, Reader, Department of Chemistry, Sambalpur University, Burla.

16. Singh, Madan Pal. Thermal and other physicochemical studies of some new lanthanide dithiocarbamates and carboxylates. Delhi.

17. Sudha Rani, Ganti. The synthesis and study of some new oxygen and nitrogen heterocyclics. Andhra.

18. Theol, Arun Wasudeorao. Synthesis of anticancer agents, pyrimidines isoxazoles and related oxygen-nitrogen-heterocyclics. Nagpur. Dr B J Ghiya, Reader, Department of Chemistry, Institute of Science, Nagpur.

19. Venkatesh Babu, M. Studies on iron based Fischer-Tropsch synthesis catalysts. Osmania.

20. Verma, Archana. Simultaneous assay and pre-column derivatization in high-performance liquid chromatography. Durgawati. Dr K K Verma, Department of Chemistry, Rani Durgawati Vishwavidyalaya, Jabalpur.

21. Visweswara Srinivas, Akella Satya Surya. Synthesis and characterisation of new liquid crystalline compounds. Andhra.

Earth Sciences

1. Chakrabarti, Parthasarathi. Geomorphology and quaternary geology of Hooghly Estuary, West Bengal, India. Calcutta.

2. Gupta, Sulekha. Modelling of solute transport through an unsaturated zone extending from ground surface to water table. Roorkee.

3. Hijam Ibeyaima Devi. Geomorphological studies along the Iril River Basin. Manipur. Prof R P Singh, Department of Earth Sciences, Manipur University, Imphal.

4. Pitale, Umakant Laxman. Geological studies of thermal energy resources and associated mineralisation in Deccan trap province, Western Maharashtra, India. Nagpur. Dr G G Deshpande, Department of Geology, Nagpur University, Nagpur.

5. Ramakrishna, B N. Studies on ground water occurrences in granites in parts of Medak and R R Districts of Andhra Pradesh. Osmania.

6. Ramana Reddy, T Venkata. Petrology and geochemistry of the Deccan trap basalts of Bhir area, Maharashtra. Osmania.

7. Sharma, M L. Procedures for analysis of digital telemetered seismic array data. Roorkee.

8. Shiva Kumar, P. Integrated geophysical and geochemical survey for hydrocarbons in Krishna-Godavari Basin, Kaikalur Area, A P, India. Osmania.

9. Venkata Raman, Chavali. Studies on the hydroclimatology of the Damodar River Basin through water balance concept. Andhra.

Engineering & Technology

1. Adhikari, Sanatkumar. Heating of the upper atmosphere during high power radio wave propagation. Calcutta.

2. Bhalla, Neelam. On constraint based object-oriented graphics database and algebraic query model for object-oriented databases. JNU. Dr S Balasundaram, Asstt Prof, School of Computer and Systems Sciences, Jawaharlal Nehru University, New Delhi.

3. Bhargava, Sunil Kumar. Transient response investigations of short journal bearing systems during acceleration and deceleration periods. Roorkee.

4. Dinesh Kumar. Analysis and optimization of systems availability in sugar, paper and fertilizer industries. Roorkee.

5. Jamaluddin Noorzaei. Non-linear soil structure interaction in framed structures. Roorkee.

6. Musafir, Ibrahim R. Study of seepage in earth dams. AMU. Dr S Khalid, Reader, Department of Civil Engineering, Aligarh Muslim University, Aligarh.

7. Sujatha, Vanapalli. Studies on ionic mass transfer with coaxially placed helical tapes on a rod in homogeneous fluid and fluidized beds. Andhra.

CLASSIFIED ADVERTISEMENTS

GURUKULA KANGRI VISHWAVIDYALAYA HARDWAR

Applications are invited from Indian citizens possessing the requisite qualifications and experience for the post of Registrar in the scale of pay of Rs. 4500-150-5700-200-7300.

ESSENTIAL QUALIFICATIONS

- (a) A postgraduate degree with atleast 55% marks or its equivalent grade.
 - (b) At least 15 years of experience as Lecturer/Reader of which 8 years should be in Reader's grade with experience in Educational Administration.
- or
- Comparable experience in research establishments and other institutions of higher education.
- or
- 15 years of administrative experience of which 8 years as Deputy Registrar or an equivalent post.
1. The post carries usual D.A. and other allowances as admissible under the rules of the University. Persons on lien will carry their own scale of pay.
 2. Appointment will be made on temporary basis.
 3. Six copies of the application forms alongwith attested copies of certificates/Marksheets and a Bank draft of Rs. 30/- (Rupees thirty only) payable to the Registrar, Gurukula Kangri Vishwavidyalaya, Hardwar should be sent to the Registrar, Gurukula Kangri Vishwavidyalaya, Hardwar so as to be received by him on or before **20th Jan. 1993**. Applications received after the prescribed date will not be entertained.
 4. Candidates in service must apply through proper channel.
 5. Issue of this advertisement does not make it binding on the University to make appointment.
 6. The University may call for interview only those candidates who are found eligible after the preliminary screening.
 7. No TA and DA shall be paid for attending the interview.
 8. The University may also consider for appointment those persons who have not applied for the post.
 9. The term of the Registrar shall be limited to five years in the first instance but the same individual shall be eligible for re-appointment.

10. This advertisement supercedes the previous advertisement for the post of Registrar published in the University News of June 1992.

REGISTRAR

MANIPUR UNIVERSITY CANCHIPUR : IMPHAL

Advertisement No. 12

Dated, the 16th December, 1992

No. MU/4-16/87/FCY : Applications in the prescribed form are invited from qualified candidates (as per UGC Circular No. 11/87 (CPP) dated the 24th September, 1992) for the following posts so as to reach the Registrar on or before **February 27, 1993**.

PROFESSOR : 1 each in Biochemistry; Education; Political Science; History; Manipuri; Computer Science; Management Studies.

ASSOCIATE PROFESSOR : Chemistry - 1 (Temporary, likely to be permanent); Life Sciences - 2; English - 2; Manipuri - 1; Statistics - 1; Computer Science - 1; Management Studies - 2; Mathematics - 2.

ASSISTANT PROFESSOR : Life Sciences - 3 (One Leave Vacancy); Computer Science - 1; English - 1; Anthropology - 1; Chemistry - 2; Commerce - 1; Geography - 2 (One Leave Vacancy); Earth Sciences - 1 (Leave Vacancy); Management Studies - 3.

DEPUTY LIBRARIAN - 1

PROGRAMMER (Computer) - 1

10 percent of the posts of Assistant Professors may be reserved for SC/ST.

SCALE OF PAY :

Professor : Rs. 4500-150-5700-200-7300/-

Associate Professor & Programmer : Rs. 3700-125-4700-150-5700/-

Assistant Professor & Deputy Librarian : Rs. 2200-75-2800-100-4000/-

Other allowances are admissible as per University rules.

The prescribed application forms and other particulars (Qualifications prescribed, branch of specialization, etc.) are available from the Counter on payment of Rs. 15/- per application form by cash or by a crossed Demand Draft/Postal Order drawn in favour of the REGISTRAR, MANIPUR UNIVERSITY, CANCHIPUR, IMPHAL-795003. One Self-addressed envelope of size 27 cm x 12 cm bearing stamps for Rs. 3/- should also be enclosed if the application form is to be sent by post. The University will not be responsible for any loss or delay in transit of the form.

It will not be binding on the University to invite all the applicants who fulfil the minimum qualifications for appearing before the Selection Committee. Candidates whose names have been recommended by the Screening Committee of the University only shall be called for interview.

Dr. T. Gokulchandra Singh
REGISTRAR

DEVI AHILYA VISHWAVIDYALAYA INDORE

University House, R.N.T. Marg,
Indore-452001

EMPLOYMENT NOTICE

No. Estt/III(13)92 Dated : 28.11.1992

Applications in the form available from the undersigned on payment of Rs. 10/- in person or Rs. 20/- by means of Crossed IPO/DD payable to Registrar, DAVV, Indore, are invited for the following positions. Completed application form should reach the undersigned by **18/1/1993**. Applications on plain paper accompanied with IPO/DD of Rs. 25/- will also be considered. Minimum qualifications and pay scales are as prescribed by the A.I.C.T.E. for Engineering Sciences subjects and U.G.C. for others. Candidates may be considered for a lower position, than applied for. R, L, T & SP denote Reader, Lecturer, Temporary and Specialization respectively.

(1) **EDUCATION** : R-1 (T) SP : Preference will be given to candidates having experience of teaching Sociology of Education. L-1(T)
(2) **JOURNALISM AND MASS COMMUNICATION** : L-1 (T) SP : Preference will be given to candidates having teaching and practical experiences in Photo journalism and Photography. (3) **ELECTRONICS** : L-1:SP : Fibre optics and Optical Communication, Communication Engineering/Control Engineering, Analog Design and Solid State Devices. (4) **LANGUAGE AND CULTURE** : L-1 : SP : Proficiency in creative writing in Hindi, English and in any one of the Indian or Oriental languages.

Candidates who have applied for the post of Lecturer in Education in response to earlier Advt. No. Estt./III(18)/91 dated 30/11/1991 and Lecturer in Language and culture in response to Advt. No Estt./III(12)/92 dated 27/7/1992, need not apply again but they should intimate their willingness to be considered. SC/ST reservation as per rules.

C.P. Modi
REGISTRAR

PUNJAB AGRICULTURAL UNIVERSITY, LUDHIANA

ADMISSION NOTICE

Applications are invited for admission to Ph.D. programme in the following subjects for the academic session, 1992-93 :

COLLEGE OF AGRICULTURE

Agronomy, Animal Science (Animal Breeding, Animal Production Physiology, Livestock Production & Management), Animal Nutrition, Agril. Meteorology, Extension Education, Entomology, Food Technology, Pomology, Vegetable Crops, Plant Breeding, Plant Pathology and Soil Science.

COLLEGE OF BASIC SCIENCES & HUMANITIES

Botany, Chemistry, Biochemistry, Agril. Economics, Sociology, Genetics, Statistics, Microbiology, Zoology, Business Administration and Physics.

COLLEGE OF VETERINARY SCIENCE

Vety. Anatomy & Histology, Vety. Bacteriology and Virology, Vety. Gynaecology & Obstetrics, Vety. Surgery & Radiology, Vety. Medicine, Vety. Pharmacology & Toxicology, Vety. Parasitology, Vety. Pathology and Vety. Physiology.

COLLEGE OF AGRICULTURAL ENGINEERING

Farm Power & Machinery, Soil and Water Engineering, Processing & Agricultural Structures, Agro Industrial Processing and Mechanical Engineering.

SCHOOL OF ENERGY STUDIES IN AGRICULTURE

Energy Science & Technology in the fields of Engineering.

BIOTECHNOLOGY CENTRE

Biotechnology in the field of Plant Breeding, Entomology, Animal Science, Genetics, Biochemistry, Microbiology.

COLLEGE OF HOME SCIENCE

Home Science Education & Extension, Foods & Nutrition and Home Management.

MINIMUM QUALIFICATIONS AT A GLANCE

i) FOR INSERVICE CANDIDATES : A grade point average of 3.20 (4.00 basis) or 50% marks at Master's level in the respective field and a grade point average of 2.00 (4.00 basis) or 40% marks at graduation level.

Inservice candidate shall be an employee of PAU or Punjab Govt., or Union Territory of Chandigarh having at least five years experience of teaching/research/extension, out of which at least three years' should be after obtaining M.Sc. degree on the last date of receipt of applications.

ii) FOR OTHER THAN INSERVICE CANDIDATES : A grade point average of 3.40 (4.00 basis) or 60% marks at Master's level in the respective field and a grade point average of 2.00 (4.00 basis) or 50% marks at graduation level.

NOTE : Please see Prospectus for the academic year 1992-93 for detailed qualifications, reservation and fellowships, etc.

FELLOWSHIPS : Besides the University Fellowships, fellowships are also available under UNDP Project in the subject of Soils, Foods & Nutrition. School of Energy Fellowships shall also be available to those Ph.D. students of FPM, PAS, SWE, EE, Biochemistry, Microbiology and Economics who opt to specialise in the area of energy.

PROSPECTUS AND APPLICATION FORMS : Available from the office of the Registrar, Punjab Agricultural University, Ludhiana on payment of Rs. 15/- per copy by cash at counter or by sending crossed Indian Postal Order (s) Rs. 20/- payable to the Comptroller, Punjab Agricultural University at PAU Post Office, Ludhiana.

LAST DATE FOR RECEIPT OF APPLICATIONS : 14.1.1993

- NOTE :
- Only one application form will be entertained for Ph.D programme on the basis of first preference of subjects mentioned in the application forms in the order of interview fixed below. Incomplete applications without due testimonials are liable to be rejected.
 - The candidates seeking admission to Ph.D programme shall be interviewed for the subjects of their first and second preference simultaneously and their merit in the respective subjects shall be prepared accordingly. The candidates giving second preference will be considered only when the list of the first preference candidates is exhausted. First preference will be given for the major subject and second preference will be for the minor subject at the Master's level.

INTERVIEWS : Interviews will be held on the following dates, time and place mentioned against the subject :

Subject	Date	Time	Place of Interview
Agronomy, Extension Education, Entomology, Plant Pathology, Food Technology.	21.1.93	9.00 AM	Pal Auditorium Complex, PAU, LDH.
Plant Breeding, Pomology, Vegetable Crops, Animal Science, Soils, Animal Nutrition, Agricultural Meteorology.	22.1.93	9.00 AM	-do-
Botany, Chemistry, Biochemistry, Business Administration.	25.1.93	9.00 AM	-do-
Genetics, Zoology, Microbiology, Agril. Economics, Sociology, Statistics, Physics.	27.1.93	9.00 AM	-do-
• College of Home Science	28.1.93	9.00 AM	-do-
• College of Vety. Science	29.1.93	9.00 AM	-do-
College of Agril. Engineering	29.1.93	11.00 AM	-do-
Energy Science & Technology	29.1.93	12.00 Noon	-do-

* All Subjects.

NOTE : iii) No separate interview letter will be issued.
No T.A/D.A. is admissible.

Kulbir Singh
REGISTRAR

UNIVERSITY OF POONA

Advt. No. : 68

Date : 22/12/1992

Appointment of Registrar Post Reserved for Scheduled Caste

Applications are invited from Scheduled Caste including Nav Buddhas candidates for the post of Registrar, University of Poona, Pune-411007.

Pay & Allowances :

Rs. 4500-150-5700-200-7300 and other allowances admissible as per University Rules.

Qualifications and Experience :

Minimum qualifications prescribed by the University Grants Commission and Maharashtra Government for the post of Registrar is equivalent to the post of Professor which is as under :

An eminent scholar with published work of high quality, actively engaged in research with 10 years experience in postgraduate teaching and/or research at the University/National

level institutions, including experience of guiding research at doctoral level.

OR

An outstanding scholar with established reputation who has made significant contribution to knowledge.

Nature of Appointment :

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University News

MONDAY, JANUARY 11, 1993

Rs. 5.00

TN Veterinary Varsity Convocation



From L to R : Shri K.P. Krishnan, Tamil Nadu Minister for Agriculture and Animal Husbandry & Pro-Chancellor, Dr. V.L. Chopra, Director General, ICAR, who delivered the convocation address, Shri Bhishma Narain Singh, Governor of Tamil Nadu & Chancellor, and Dr. V. Gnanaprakasam, Vice-Chancellor, TN Veterinary and Animal Sciences University.

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Code : MSU/ADV/3/92 Date : 18.12.1992

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REGISTRAR

UNIVERSITY NEWS

VOL. XXXI JANUARY 11

No. 2 1993

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IN THIS ISSUE

Thinking Aloud – HOLIDAYS	10
Academic Staff College Programmes	11
Information Services and User Response	12
Convocation	
Tamil Nadu Veterinary and Animal Sciences University, Madras	14
Campus News	
Cost Effectiveness of Open Universities	17
Bureaucracy & the Politicians	17
PG Diploma in Forensic Engineering	18
Interpreting Indian Philosophy	19
The Decade Before Independence	20
Agriculture	
Static Agricultural Growth in South	20
World Bank Projects for HAU	20
NARP Regional Workshop	21
News from UGC	
Countrywide Classroom Programme	21
Book Review	23
Theses of the Month	27
Current Documentation in Education	29
Classified Advertisements	31

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Editor :
SUTINDER SINGH

Management of Universities - 1

M.R. Rao*

Over the years, various commissions and committees have thoroughly examined the problems of management of universities and suggested various measures to improve the governance of the universities. The University Education Commission (December 1948 - August 1949) discussed the issue of governance of the universities under the Chapter "Constitution and Control". The Committee on "Model Act for Universities" under the Chairmanship of Dr. D.S. Kothari considered the same problem and submitted its report in 1964. The Education Commission Report submitted by Dr. D.S. Kothari discussed the issue in a separate chapter "The Governance of Universities". The UGC appointed a committee in 1969 on the "Governance of Universities and Colleges" headed by Justice P.B. Gajendragadkar. It suggested various measures for the improvement & governance of universities. The responsibility of implementing the recommendations of the various reports is primarily that of the state. The Kothari Commission in its concluding paragraphs aptly observed "The report of a commission is not a substitute for action. Its purpose is to generate action. A report which is shelved or does not lead to action is worse than no report because it leads to frustration by arousing hopes that remain unfulfilled".⁽¹⁾ There were not many changes in the governance of universities even after the publication of the reports.

Hon'ble Shri P.V. Narasimha Rao, the then Minister for Human Resource Development (who is now the Prime Minister) presented in the Parliament, "The Programme of Action." It says under the strategy of consolidation and implementation ".....to review the management patterns including the structure, roles, and responsibilities of various universities/bodies in the light of the new demands on the university system. The UGC will take steps to promote the evolution of new, efficient and more effective management systems and organise wide discussions on them so that they become the basis of new legislations".⁽²⁾

Accordingly the UGC appointed a committee on the Management of Universities and also circulated the summary and recommendations of the report of the universities for their views. This paper makes an attempt to study the existing patterns of management in different universities and examine some of the suggestions of the UGC committee report on Management of Universities (Hereafter the Committee on Management of Universities is referred as CMU). The committee's "main emphasis has been to provide a sound scientific framework for governance of universities which will make them efficient, result-oriented and averse to politicisation".⁽³⁾

Indian universities had come into existence through Acts of the state legislatures. Ten central universities were, however, created by the central government and some other organisations were deemed to be universities under Section (3) of the UGC Act 1956. Many old university Acts had preambles in which the main objectives were spelt out. The Madras University Act 1923 was enacted with an object of converting purely affiliating university into a teaching and affiliating university. The preamble of the Act enunciated one of its objectives as follows: "Whereas it is expedient to reorganise the University of Madras with a view to establishing a teaching and affiliating university at Madras while enabling the University to continue to exercise due control over the quality of the teaching given by colleges which are affiliated to or approved by the University of Madras".⁽⁴⁾

* Former Dean of Collegiate Education, Andhra University,
Waltair, Visakhapatnam-530 003.

The preamble of the Act, in a nutshell, gives the objectives of legislation and also aids in the construction of an Act. The Bombay University Act 1974 incorporated a very elaborated preamble with the aim of better governance of universities and the reorganisation of higher education. Now-a-days the importance of preamble appears to have declined. The Andhra Pradesh Universities Act 1991 which replaced individual universities Acts of Andhra Pradesh has no preamble at all.

Single Act Vs Uniform Act

Generally an Act determines permissible activities and duties to be performed by a university. It defines the structural relationships between the state and the university among the various authorities of the university. It describes powers of authorities and officers and determines the internal organisation of the university.

Today the trend is towards enactment of a single act for all the multi-faculty universities within a state. Karnataka was the first state in South India to enact a uniform single legislation known as Karnataka State Universities Act in 1975. Andhra Pradesh adopted the same pattern in 1991 but the other two States, viz., Tamil Nadu and Kerala are administering their universities through individual university Acts. In Maharashtra State, each university is governed by separate legislation; however the universities Acts are identical. The states of Bihar and Orissa have enacted uniform Acts for the universities in their states.

Whether it is a uniform Act or an individual university Act, it should be comprehensive. The constitutions of our universities are modelled on the old constitution of three Presidency Universities, i.e. Calcutta, Bombay and Madras. Our higher education system has changed rapidly but there are no corresponding changes in the management of universities.

Some university Acts contain bare minimum provisions for the creation of a university and leave all other aspects to the authorities of the university to make necessary constitutions through statutes, ordinances and regulations, standing orders, administrative manual, etc. The Model Act Committee suggested: "The main Act of a university should lay down the structure and organisation in broad terms and the relevant details may be prescribed by statutes and ordinances"⁽⁵⁾. The CMU has also expressed the similar view but suggested guidelines for a model Act. An Act is a public document and known to public very well when compared to statutes and ordinances. Even the internal members of a university are ignorant of the statutes and ordinances. Thus an Act should be comprehensive rather than containing bare minimum provisions for the creation of a university. Most of the universities are affiliating ones; yet some university Acts have not provided adequate

provisions/separate chapter for the affiliated colleges. The Andhra Pradesh Universities Act 1991 is a classic example. The defensive argument is that the statutes will make necessary provisions for the affiliated colleges. A uniform Act does not necessarily provide uniform statutes. The conditions of affiliation differ from university to university within a state unless they are incorporated in the Act. Statutes should be minimum and should supplement the deficiencies, if any, in the Act.

Most of the Acts are silent about vital aspects of the management of universities. The CMU says "provision should be made for extension in clear terms in the Acts of all universities". Thus the committee has expressed indirectly that all vital aspects should be incorporated in the Act. The Bihar State Universities Act 1975 incorporated a separate section prescribing the code of conduct for teaching and non-teaching employees of the university or of a constituent college. As such the vital aspects of the management of a university should be incorporated in the Act.

Powers and Functions of a University

Generally Indian university Acts are divided into Chapters with captions for the sake of convenience of the administrators. But some university Acts are ignoring this aspect because convenience has no legal implications. Generally the Act incorporates the powers and duties of a university.

The list of functions to be performed by the university is very exhaustive in some university Acts and in others it is limited. University Acts in Maharashtra State incorporated that the university shall have power to perform forty three duties as listed in the Section (4) of the Bombay University Act. According to Andhra Pradesh Universities Act 1991, a University shall have the power to discharge twenty five functions as incorporated in Section (5) of the Act. The Orissa Universities Act 1989 listed only a few functions to be performed by the University.

The CMU recommended that some more matters (functions) should be included under the powers of a university. The traditional powers conferred on the university through an Act by the state are not at all sufficient to discharge its role in the modern times. The CMU suggested the university should have the power to evolve an operational scheme of enforcing the accountability of teachers and non-teachers; to prescribe code of ethics for the teachers, code of conduct for the other staff and code of discipline for the students; establishment of a "Grievance Redressal" machinery; to provide instruction through "Distance Learning" and "Open Approach", etc. The university should have a large number of powers to discharge various functions to meet the demands of modern times.

A university should have the power to enter into academic agreements with sister universities within and outside the state and the UGC. The UGC and the state should encourage such agreements in order to avoid a great deal of duplication and wastage of expenditure. At least within the state, the state level centres of excellence may be opened through academic collaboration and certain academic programmes should be opened for the entire state as in the case of UGC sponsored programmes for the whole nation.

Authorities of a University

The internal organisational structure of a university in India was inherited from the first three Presidency Universities i.e., Calcutta, Bombay and Madras. As mentioned earlier, an Act prescribes the powers and functions of a university and creates authorities (internal structures) in order to discharge the powers and duties conferred on the university. The university also may create additional authorities through the mechanism of statutes with reason or without reason in the interest of efficient management. The Model Act Committee had not formulated "Model Act".....but has given considerable thought and attention to the formulation of general principles that should govern the formation of the principal "authorities" of a university and which may be thought of as the core of an Act.⁽⁷⁾ Authorities created by university Acts may differ from state to state. In Maharashtra State the number of authorities listed in the university Act are nine, whereas in Karnataka, they are six only. According to the Andhra Pradesh Universities Act 1991, the authorities are (i) Board of Management; (ii) Academic Senate; (iii) Faculties; (iv) Boards of Studies; and (v) such other bodies the statutes may declare to be authorities of the universities. Thus there is a tremendous flexibility for the universities to create authorities as and when necessary for the management of universities.

The Three-tier System of Authority

The 3-tier authority system which has been in existence since the inception of the university education are, the Senate, the Syndicate/Executive Council and the Academic Council. These three authorities are the real governing bodies of the universities. But the functions of these bodies are overlapping and there is some confusion and therefore there is some difficulty in making university laws. The significant feature of university management is that policies are formulated through democratic process and implemented through executive process. Thus the Syndicate/Executive Council/Board of Management executes the decisions of all authorities inclusive of the Senate and the Academic Council. The Vice-Chancellor is the Principal Executive/Chief Executive and he shall give effect to the decisions of the Senate, the Executive Council and the Academic Council.

The Senate : Is it a Supreme Governing Body ?

The Senate is the oldest governing body of a university. The peculiar characteristic of this body is its composition. The size and composition of the Senate may differ from university to university. Various committees from time to time suggested the desirable size and ideal composition on the basis of the type of the university. The University Education Commission suggested a maximum of 120 members for the teaching and affiliating universities. It also suggested maintenance of balance in the Senate's composition in the following words: "There should be a two-fold kind of balance (a) between academic and non-academic members; (b) between university representatives, affiliated colleges representatives and external members".⁽⁸⁾ Thus it should consist of internals and externals on fifty and fifty basis. The CMU says that the size of the Senate should be a maximum of 100 members in affiliating universities and it should consist of nominated/ex-officio members. In other words there shall not be elected members in the Senate/Court. Currently in most of the universities, the Senate is composed of ex-officio, nominated, elected, selected members, etc. The Kothari Commission suggested "that the Acts of universities should only provide for the total membership of the Court or the Senate while its detailed composition may be provided in the statutes. This will enable the universities to change the composition of the Court in the light of experience and requirements without going through elaborate legislative procedures".⁽⁹⁾

Generally the Senate meets in two sessions in a year as one is budget session and the other is general session. The duration of each session is one day/half day depending on university convention.

In some universities the Senate still enjoys the status of supreme governing body but in others it is no more a supreme governing body. Why is it called the supreme governing Body? "At one time when there was no Academic Council it was usual to describe the Court as the supreme Governing Body".⁽¹⁰⁾ It had also the power of electing the Vice-Chancellor and the Registrar. According to the original Andhra University Act 1926 'the Vice-Chancellor shall be a whole-time officer of the University and shall be elected by the Senate'. Similar was the case of the Registrar. Now the power of choosing the Vice-Chancellor/Registrar by the Senate is taken away in almost all the universities in India. The Senate has the power of electing members from among themselves to the Syndicate/Executive Council. The electoral power differs from university to university. In Maharashtra State the Senate of a university elects seven persons other than Principals, teachers and students from among its members. Thus they are outsiders of the university and represent the public in the Executive Council. On the other hand, according to Karnataka

state Universities Act 1976 ".....three persons, none of whom being an employee of the university or an affiliated college or a representative of students, elected by the Senate from among its members",⁽¹¹⁾ to the Syndicate. Dr. S. Radhakrishnan Commission recommended that the Senate of teaching and affiliating universities may elect four persons from among themselves to the Executive Council. The Model Act Committee as well as the Education Commission, however, opined that three persons may be elected from the Senate to the Executive Council. Generally these persons elected from the Senate to the Syndicate/Executive Council will be externals/outsideers. The Senate need not be constituted only for the purpose of electing externals to the Syndicate. Alternatively external members representing industry, trade, agriculture, academics from other universities or national research laboratories (in other words, user agencies/knowledge users) may be nominated to the Syndicate/Executive Council. As per the Andhra Pradesh Universities Act 1991, four eminent persons from the fields of industries or commerce or legal, engineering or medical professions or from such other fields of public life as the government may consider useful to the university are to be nominated by the government. As the government (and not the Chancellor) is nominating the members, political rather than objective considerations may prevail. The A.P. Government has nominated in some of the universities former M.L.As. and M.L.As. on the Board of Management as men of public life. The CMU report states that "in many universities, the authorities like the Senate, the Academic Council and the Syndicate are determined by non-academic members who have a tendency to politicise the atmosphere. Great care must be taken to see that the political parties and politicians do not interfere in the governance of the university administration".⁽¹²⁾ The UGC should formulate guidelines on all India basis for nominating members on the Syndicate/Executive Council of the state universities.

Next to electoral power, the important power of the Senate is the power of making statutes subject to such conditions as are prescribed by or under the Act. Generally statutes define the framework of operation of authorities and offices and the form and administrative activity of the university. Every university Act defines the subject of making statutes. The Senate has the power, to draft a statute on its own motion or on a proposal made by the Executive Council. When the Senate proposes a draft of a statute on its own motion, it will be referred to the Executive Council/Syndicate for its opinion. No statute passed by the Senate will come in effect until assented to by the Chancellor. The UGC Committee's report recommended that the Senate should have no power to make the statutes. According to the A.P. Universities Act 1991, the Academic Senate (now there is no separate Senate) has no power to make statutes.

On the operational side, the agenda for the Senate will be finalised by the administration under the direction of the Vice-Chancellor. Further the asking of the questions (if any) which is a business of the Senate, the Syndicate/Executive Council shall decide on the admissibility of questions and the decision of the Syndicate/Executive Council is final. In most of the universities the Senate has no power to reject/amend the ordinance made by the Syndicate/Executive Council. At the most it may refer the ordinance back to the Executive Council, which happens very rarely. Similarly it has no power to modify or cancel the regulations made by the Academic Council. The CMU report states that the "Senate" should not be the supreme Governing authority and should have no powers to make the statutes or approve the Budget".⁽¹³⁾

At one time, the Senate had the power to review the actions of the Syndicate/Executive Council and the Academic Council, (save where the Syndicate and the Academic Council have acted in accordance with the powers conferred on them under the Act, the Statutes or the Ordinances). But the power of reviewing the actions of the Syndicate and/or the Academic Council was taken away in most of the universities. The Model Act Committee also suggested "the court should have no power to interfere with the decisions of other authorities acting within the powers given to them by law; the Court is not to be regarded as a superior body to revise the decisions of the Executive Council or the Academic Council. Legislation by the Executive Council or the Academic Council need not require confirmation by the Court".⁽¹⁴⁾

Finally the Senate has the power of consideration and passing resolutions on the annual accounts, audit reports, budget and annual report. According to the Karnataka Universities Act 1976, "the Senate shall have the power to review, from time to time, the policies of the university and to suggest measures for the improvement and development of the university and to consider the annual accounts and audit reports of the university".⁽¹⁵⁾

The most important function of the Senate is the approval of annual accounts, audit report and budget as placed by the Executive Council. According to universities Acts of Maharashtra State "The Senate shall be the principal authority for all financial estimates and budgetary appropriations". The executive authority i.e. the Executive Council/Syndicate is responsible for the management of finance, it presents the accounts and audit report together with explanations for the questions raised by the auditors to the Senate and it will justify and defend its decisions. The university accounts in general are audited by the Local Fund Examiners of the State; this practice has been criticised by expert committees because audit by this agency by the state has involved considerable delays thus defeating the very object of audit. It is necessary to increase the pace of

audit work so that many financial irregularities are brought to light within a reasonable time. Some universities have adopted the method of continuous audit for the purpose of locating irregularities and setting them right.

The post of Finance Officer is a statutory post in all the universities but the mode of appointment differs from university to university. According to Karnataka State Universities Act 1976 "the Finance Officer shall be a whole-time officer of the university appointed by the Chancellor or from among the officers of the central or state governments, having experience in audit, accounting and financial administration. He shall be on deputation to the university for such a period and on such terms and conditions as may be determined by the Chancellor". In most of the universities the appointing authority of the Finance Officer is the Executive Council (Maharashtra, Andhra Pradesh, Bihar, etc.) and not the Chancellor. One unanimity in all the universities is that the Finance Officer should be drawn from the state/central government having knowledge of accounts and audit and he should be under the general control of the Registrar. The Bihar State Universities Act 1976 (as amended in 1981) created a post of "Financial Adviser" who shall be appointed by the Chancellor. The Financial Adviser shall work under the administrative control of the Vice-Chancellor and financial officers shall work directly under the control of the financial adviser. "It shall be the responsibility of the Registrar to obtain the advice of the Financial Adviser on all matters having financial implications. Moreover it shall be the responsibility of the Registrar to mention specifically at the time of placing such a proposal before the Syndicate that the concurrence of the Financial Adviser has been obtained or that he has not concurred the proposal".

Currently the Finance Officer is a lower grade superior officer working under the control of the Registrar. He cannot act independently in tendering his expert advice contrary to the wishes of the Registrar and the Vice-Chancellor. The status of Finance Officer/Adviser should be equal to that of the Registrar. Every file should be routed to the Vice-Chancellor through the Registrar was the concept of the nineteenth century when the Vice-Chancellor's post was honorary/part-time. The Finance Officer/Adviser should be under the direct control of the Vice-Chancellor.

In most of the universities the duration of the session of the Senate is normally one day. It cannot make critical and constructive comments on the accounts and audit report in short span of time. In the universities of Maharashtra State a statutory committee is being constituted known as "University Accounts Committee." The Committee shall scrutinise the annual accounts to satisfy itself that the moneys shown as having been disbursed were properly available for the purposes for

which they were spent and that the expenditure incurred was in accordance with the law at that time in force. The committee shall submit its report to the Senate from time to time and suggest any actions to be taken thereon regarding any lapses or irregularities which come to its notice and, thereupon, the Senate shall take such action as it thinks necessary. Such a committee report will be helpful to the Senate to pass constructive resolutions on the accounts of a university. It is desirable to constitute "University Accounts Committee" in every university for the proper financial accountability of the Executive Council to the Senate.

Generally the university budget will be prepared on the basis of anticipated block, special and other grants from the state and self-generating resources. The self generating resources are tuition and examination fees, affiliation fees, fee charged for consultancy; patent rights; rent from the estate such as buildings, guest houses; income from Press and publications etc., and the self-generating resources do not exceed even twenty five percent of the budget. The accounting system in most of the universities is based on receipts and payments system which does not insist on the preparation of balance sheet. In most of the universities the balance sheet is conspicuously absent.

The Executive Council/Syndicate is not a expert body to prepare a budget for the university. A statutory provision is generally being incorporated for the constitution of "Finance Committee" and Finance Officer is the ex-officio Secretary of the committee. The Committee considers the financial estimates as prepared by the Finance Officer and makes suggestions and recommendations for submission to the Executive Council. The composition and status of the Finance Committee differs from state to state. According to Andhra Pradesh Universities Act, 1991, the Finance Committee is a sub-committee of the Board of Management (Executive Council) whereas according to Karnataka a State Universities Act 1976, the Finance Committee is not a sub-committee of the Syndicate. Similar is the case with regard to universities of Maharashtra State and the Finance Committee is composed of the nominees of the state, the Academic Council, the Executive Council, Senate besides the Registrar and the Finance Officer. The Vice-Chancellor is the ex-officio Chairman.

Most of the universities in India are not accustomed to declare its mission and objectives especially the academic policy, in an explicit manner. The annual report is the performance report for a particular period i.e., one academic year prepared under the direction of the Executive Council. The report provides an account of the academic activities and events that the year has witnessed, the teaching and research activities of various academic department, constituent colleges, postgraduate extension centres, activities of students, statistical information of affiliated colleges, degrees

awarded, standards of education, academic excellence, etc. The annual report gives the list of achievements rather than its failures such as number of teaching days worked, the number of candidates passed in the National Education Test, etc. Further it does not give what will be its future academic programmes and targets for the next year. The presentation of annual report in the Senate is customary/ritualistic rather than academic accountability. The Senate discusses the report and passes resolutions for necessary action by the Executive Council. The internal members of the Senate restrain themselves from making any critical comment on the annual report since it is prepared by the Executive Council. On the other hand, the external members (who are not employees of the university) who are representing the society/public do not generally state what they want the universities to do. If there is a review report on annual report by a team of experts, then the Senate can understand and suggest measures for the development and improvement of the university. In many university Acts a statutory provision is made for the constitution of Academic Planning and Evaluation/Monitoring Committee "for the purposes of preparing plans and programmes of development and improvements of the university and in its courses of study, examining and evaluating, from time to time, the progress achieved in such plans and programmes, testing and evolving new methods of teaching and for consultation and exchange of information with similar organisations, other universities and research institutes for any of these purposes".⁽¹⁶⁾ According to Andhra Pradesh Universities Act 1991, there shall be a "Planning and Monitoring Board consisting of (i) the Vice-Chancellor (Chairman); (ii) four from among the Principals of university and professional colleges, Deans/Chairmen of faculties nominated by the Vice-Chancellor; (iii) two educationists nominated by the government; (iv) two nominees of the University Grants Commission.

In Bihar and Maharashtra, the nominees of UGC are not included in the body, whereas in Andhra Pradesh the nominees of UGC also are participating in the academic planning and evaluation. The UGC is the custodian of standards of teaching, research and examinations and it should participate in the academic evaluation of a university. The UGC Committee report suggested the creation of a statutory body known as "Planning and Monitoring Board" and it should "consist of members drawn from the faculty, the state government, the State Council of Higher Education, Colleges, etc."⁽¹⁷⁾ Instead of UGC nominees, it suggested the nominees of State Council of Higher Education. The CMU also suggested setting up of "Academic Audit Committee" which "should go into all aspects of the academic programmes, viz., teaching, research, extension, curriculum development, examination system, etc."⁽¹⁸⁾ It is more a division of work between "Plan-

ning and Monitoring Board" and "Academic Audit Committee". The Academic Audit work may be entrusted to the Planning & Evaluation body. This body should review the annual report of a university and submit its report to the university. The university, in turn, places the review report along with the annual report before the Senate.

The special characteristic of the Senate in any university is the participation of lay representatives, who are supposed to represent the general desires and aspirations of the society. It has limited authority in reviewing the working of the university and to suggest measures for the well-being of the university. Almost all commissions and committees advocated that the Senate/Court should have no power to interfere with the decisions of other governing authorities but no commission/committee suggested the abolition of the Senate, perhaps for the reason that the Executive Council should be accountable of its performance to another authority within the university. The Academic Council which is responsible for the maintenance of standards of teaching, research and examination should also be accountable. These two authorities are accountable to another authority i.e., the Senate which represents the society. Thus the senate is privileged to enjoy ceremonial sanctity reviewing annual accounts, audit report and annual report. The CMU suggested that the Senate/Court should be redesignated as "Social Advisory Council" or "Consultative Committee of Society."

Academic Council : Is it a Supreme Academic Authority ?

The other important authority of a university is Academic Council. It is the academic legislature of a university. Various universities' Acts have declared that the Academic Council is the principal academic authority of a university. The size and composition may differ from university to university but the basic concept is the same, i.e., maintenance of standards of teaching, research and examination in the university.

The CMU suggested "The Academic Council shall not have more than 50-75 members including all Deans and representatives of Professors, Heads of Departments and other teachers. The non-academics on the Syndicate/Senate should not be members of the Academic Council".⁽¹⁹⁾ Dr. Radhakrishnan Commission suggested a much smaller body of 45 members but the limit of 45 may be exceeded in the case of larger universities. The ideal size of the Academic Council may be determined on the basis of the size of the university based on the number of teaching disciplines, post-graduate centres, the number of constituent colleges and affiliated colleges, recognised institutes, etc. Perhaps keeping this in view the Model Act Committee had observed "it is unnecessary to fix a definite maximum number for the Academic Council".⁽²⁰⁾ It also meets like

the Senate twice a year and the duration of each session depends upon the number of items on the agenda.

The subsidiary authorities of the Academic Council are the Faculties and the Boards of Studies. The Chairpersons of these authorities are designated as Deans and Chairmen. These chairpersons as well as Heads of the Departments are taking seats in the Academic Council by virtue of their positions. The CMU suggested the representatives of Professors, Heads of Departments and other teachers should be members of the Council, besides the Deans. In most of the universities the composition of the Academic Council is as mentioned above. In some universities the rotation of Headship and Chairmanship meant that the senior Professors are deprived of the membership of the Council. The junior Professors who occupy the chairs ignore the suggestions of the senior faculty. To avoid such an embarrassing situation, a balance should be struck between the old and younger faculty in the Academic Council.

The CMU also suggested that non-academics should not be members of the Council. It is a practice in some universities that the State Heads of different types of education such as a General, Technical, Medical are sitting in the Academic Council meetings as ex-officio/nominated members. The state is financing the education not only of the government colleges but also giving aid to private colleges. Certain regulations require considerable amount of money from the state for implementation and it should be passed in the presence of state administrators of higher education. The academic administrators are border line academicians between academicians and non-academicians and their presence does not erode the academic sovereignty of the Council.

The powers and duties of the Academic Council are almost similar in all the universities. The electoral power of the Academic Council is far less when compared to the Senate in most of the universities. According to the Karnataka State Universities Act, 1976 the Academic Council has the power of electing one person to the Syndicate, whereas the Senate has the power of electing three persons to the Syndicate. In the case of Maharashtra universities, the Academic Council elects three persons and the Senate elects eleven persons to the Executive Council. The Senate is composed of academicians and non-academicians and the Academic Council is mainly composed of academicians. Thus the representation of Academic Council in the Executive Council is less, when compared to the Senate. Further, the Senate elects both academics and non-academics to the Syndicate, as such there is no need of heavy representation from the Academic Council to the Syndicate/Executive Council.

The supreme power of the Academic Council is the power to make regulations subject to the conditions prescribed by the Act and approval of the Executive Council. It is also the practice in some universities that the Senate should also give its approval for the academic regulations. But the Senate has no revisional jurisdiction over the action of the Academic Council so long as it acts in accordance with the powers conferred by the Act.

In many universities, the Executive Council has overriding power over the Academic Council in the approval/disapproval of regulations framed by the Academic Council. In Maharashtra State, University Executive Council has the power to accept, reject or refer back any regulations made by the Academic Council. Of course it has no power to amend any regulation made by the Academic Council. The "Model Act" Committee aptly observed "Its (Academic Council) decisions except for financial reason should not be subject to modification or approval by anyone else".⁽²¹⁾ According to the Andhra Pradesh Universities Act 1991, the Academic Senate shall have power to make regulations and the Board of Management shall have power to make, amend or repeal regulations, statutes and ordinances. Thus the Board of Management is usurping the authority of the Academic Senate, consequently it has lost sovereignty. The CMU suggested "It (Executive Council) should not have the power to approve ordinances/regulations passed by the Academic Council except where they have major administrative/financial implications."⁽²²⁾ Theoretically some academic regulations are quite sound but there may be practical difficulties (financial/administrative) in the implementation of these regulations. In such cases the Executive Council's approval is obviously necessary. But the power to make, amend or repeal regulations should not be in the hands of the Executive Council.

The subsidiary authorities of the Academic Council in many universities are the Faculties and the Boards of Studies. The academic hierarchy is "inverted hierarchy". Generally initiative for change in the academic reforms originates at the Board in the first place, then proceeds upward to the faculty and finally to the Academic Council. Almost all universities Acts have identified Faculties and Boards of Studies as the authorities of a university. But the relationship among these authorities are not well defined in some of the Acts. The Model Act Committee has observed ".....It is difficult to define in exact terms the relationship that should exist between the Academic Council, the Faculties and the Boards of Studies. There may be some overlap in their functions. Each university will have to spell out these functions in accordance with its own needs and traditions".⁽²³⁾ Generally in every university there shall be a Board of Studies attached to the department of study. In some universities two Boards are in existence – one for postgraduate and the other for the undergraduate. The

Andhra University is having two Boards for the subjects like History, Economics, Politics and Public Administration, Mathematics, Physics, Chemistry, Commerce, etc., and one Board of Studies for the subjects of Law, Pharmacy, Civil Engineering, Mechanical Engineering, Electrical Engineering, etc. The Model Act Committee is in favour of single Board of Studies rather than two Boards on the ground of problems of overlapping nature. The size varies for university to university and the statutes determine the size, composition and functions of the Boards of Studies in many universities. The CMU suggested "These Boards of Studies should include 20% of the members from external experts, 20% from the user agencies and the remaining 60% from faculty members teaching in the concerned discipline".⁽²⁴⁾ The user agencies should be consulted before designing any academic programme since they are future employers of university output of graduates and research information. Of late many universities have made a provision in the Acts/Statutes for the student representation in the Boards of Studies. The question of students direct participation in the academic decision bodies is a critical issue. But the voice of students should be heard before making academic decisions which affect the students. In Maharashtra, the university Acts made a provision for "Consultative Committee" for each "Board of Studies" which shall consist of the Chairman and four other members of the Board of Studies to be nominated by the Vice-Chancellor and four student selected on the basis of merit at the examinations.

The Board of Studies is presided over by its Chairman. Generally the Head of the Department is the ex-officio Chairman of the Board; in some cases persons external to the department or to the university, preside over the Board meetings. Gajendragadkar Committee says that the Head of the Department should be ex-officio Chairman of the Board; this view recognised the necessity for coordination through common leadership of the department's decisions of task determination and task performance. Many universities have adopted rotation of the Head of the Department and the Chairman of the Board of Studies. The rotation of Headship has created instability and disorderliness in the management of a department. In some universities the Chairman will be elected by the members of the Board from among themselves. Whoever is elected/selected/nominated should be a competent person and man of wisdom.

In the inverted hierarchy the Faculty Council is middle level authority between the Board of Studies and the Academic Council. The faculty is a federation of departments having some common academic background. The number of faculties and of the departments within a given faculty varied from one university to another. The faculty may consist of only one department as in the case

of the faculty of Law or Commerce or Pharmacy, or it may consist of a large number of departments as in the case of Faculty of Science or Arts or Social Sciences. According to the Gajendragadkar Committee, the Faculty of Science is too amorphous and a large body and it should be reclassified into separate faculties of Physical Sciences, Earth Sciences, Biological Sciences and Mathematical Sciences.

The designation of "Dean" is given to the Head of the Faculty in most of the universities. He is appointed in various ways; according to the Andhra Pradesh Universities Act 1991, he shall be appointed by the Board of Management (Executive Council) from among the members of the faculty concerned on the recommendation of the Vice-Chancellor. In Maharashtra universities the Dean is elected from among the members other than student members and according to Karnataka Universities Act 1976, every Head of a Department of Studies who is a Professor shall, by rotation according to seniority, act as the Dean of Faculty for a period of two years.

The CMU states that the Faculty Council is "responsible for the entire gamut of teaching, research and extension programmes of the departments within the faculty. Its emphasis should be on translating basic policies formulated by the university authorities into workable guidelines for departments to follow. Adequate powers and authorities will need to be given to the Dean to enable him to coordinate and monitor the academic functioning of the departments".⁽²⁵⁾ As per the above description, the Dean shall become super-head of the departments within the faculty. The Chairman of the Board of Studies determines the academic task to be performed by the department and the Head of the department performs the academic task as determined by the Board of Studies. The Dean of the Faculty cannot interfere in the academic task performance of the department since the Head is responsible for the department. The Board of Studies resolutions are directly routed to the Academic Council through the Executive/Vice-Chancellor, and need not go through the faculty. Thus the faculty is not a superior authority over the Board of Studies. The functions of the Faculty Council are limited and advisory in nature. Maharashtra universities Acts have defined the powers and duties of faculty as follows : to elect its dean, to consider and report on any matter referred to it by the Executive or Academic Council or the Board of University Teaching and Research; to remit any matter to a Board of Studies comprised within the faculty for consideration and report; to consider and report on a recommendation referred to it by a Board of Studies; to appoint a committee of faculty for any purpose within its purview, etc.

Thus the faculty transacts major business that is referred to it by the Executive, Academic Council, Board of Studies, etc., and the work at its own initiative

is almost negligible. The single department faculty is superfluous. Thus the Faculty is more an academic ornament than academic beauty. Almost all universities Acts have identified faculties and Boards of Studies as the authorities of the University. The Standards Committee is very critical about functioning of these two authorities and says "It has been found by experience that ordinarily, if one of these bodies is effective, the other is merely ornamental.... The Faculty organisation considered as interposed between the Board of Studies and the Academic Council has become outmoded. They also have the effect of perpetuating the dichotomy between Arts and Sciences and restricting a free development of research and investigation of border areas. In our view the Boards of Studies can be related to the Academic Council directly".⁽²⁶⁾

Thus under the faculty organisation the inter-departmental collaboration in the area of teaching and research has not fostered well in many universities. In order to encourage inter-disciplinary studies, some universities have established "Boards of Inter-disciplinary Studies". Maharashtra universities Acts described the composition and the powers and duties of the Boards of Inter-disciplinary Studies as prescribed by the Statutes. The CMU suggested "There shall also be inter-disciplinary Boards of Studies and research wherever such programmes are offered".⁽²⁷⁾ Long back (1977) the UGC suggested that the universities should adopt organisation of schools by grouping together departments which have common programmes, which can interact in the matter of organising common courses and research programmes. This school organisation is an addition to faculty organisation for the purpose of inter-disciplinary courses.

In Maharashtra universities, there is another authority known as "Boards of University Teaching and Research" for each faculty in addition to Boards of Studies, Faculties, Boards of Inter-disciplinary Studies. It is constituted at the faculty level but it is superior than faculty in terms of its powers and duties. The basic concept of this authority is to take care of postgraduate teaching and research in the colleges including affiliated and recognised colleges. Thus academic structure is made up of Boards of Studies. Faculties, Boards of Inter-disciplinary Studies and the Academic Council.

The academic organisation is a flat organisational pyramid. By flat is meant loose control from the top and generally, a bottom heavy locus of effective power over important matters. The academic hierarchy levels are two and the communication flows (from bottom level to the top level) are direct. The academic decisions of the Boards of Studies and Faculty Council directly flow to the highest authority, i.e., the Academic Council, of course, through the Executive Council/Syndicate. The decisions of the Boards of Studies need not be routed through the Faculty Council unless the Board/Executive

Council refers the matter to the faculty. The Faculty/School organisation provides base for the horizontal communication flows between the peers because they share a common frame of reference. The communication between the equals than with superiors is more effective. Thus the academic power is decentralised in universities but the reconciliation of differences and divergences among the faculty members is frequently managed by committees rather than by individual academicians.

(To be concluded)

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Thinking Aloud – HOLIDAYS

Ramjibhai Patel*

Holidays! Who does not enjoy the very idea of a holiday? All of us do. Then come along, let us call every day a *Holiday*.

No, That would mean retirement.

What we desire is *no work* but assuming that the work is going on/being done, salary and all the other perks *Must Continue* to pile up. That is a *Holiday* we all cherish.

There are *Holidays* without Salary/Pay. But who wants that type of a Holiday? None of us atleast, we the professors of the university – college level teachers, engaged in the laudable task of building tomorrows citizens. No only the *Holidays* but even the strike days must be counted as *Paid Holidays* because they are always justified as the *Right* of the working class. Pay without work results in inflation of prices. It was in the year 1975, not long ago that the Prime Minister of Britain, the model for all the democracies all over the World, had given a slogan or a cryptic statement :

One Man's Wage Increase Means Another's Price Inflation.

If the productivity rises with the rising price-index, the two get nullified or adjusted against each other. But most of our holidays and strikes are at the cost of production. Therefore it has a direct relation on rising prices.

The pay-scales of the college teachers, professors are more than satisfactorily increased as per the recommendations of Mehrotra Commission. It is time for introspection as to how much more we are putting in additional teaching efforts? Government and other working classes also must undertake such an introspection. Now is the time for it. Let us examine the case of the college teachers.

In colleges, there are four vacations amounting to 100 days. Add to this the number of sundays and other holidays, and casual holidays. All these add up to a whopping 180. Not only that there are also the days when a Professor does not teach but just signs the muster and comes back, without seeing his classes or lasses or asses as the popular joke goes. This shows that we the college teachers do not work even for half a year though we get all the pay and the perks for all the days of the year. If we consider the real hours of the work put in the picture will be still dismal.

Quoting Devvrata Pathak the learned Kulapati (now retired) of Saurashtra University who is reported to have stated that :

"If we realise the value of Education, we should evolve such an arrangement whereby the student as well as the professor spends much of his time in the College/University – full pay and working for part-time must cease. The time is not far off when the society will ask not only the students but also the Professors, What have you done for the society?"

The present Kulapati/Dean of the Gujarat University writes :

"How much more work do the students and the Professors of developed countries put in everyday? Their educational institutions are working from 8 a.m. till late night. There are the least number of holidays in the educational institutions. If the developed countries are putting in so much efforts for education how much more efforts should we put in as a developing country?"

Prof. Lakshmidhar Malaviye working in a Japanese University has not availed of even 17 days leave during his tenure of 17 years of working there. One of his colleagues who lost his wife in the morning at 6 a.m. was in his classes (taking his classes) at 9 a.m. just three hours after such a calamity. When the P.M. of Japan, Ohorita died in 1980, no educational institutions were closed for the day. Recently when the Government decided to work for five days in a week, the people protested and the Government had to withdraw the proposed changes and start working six days a week. There are no strikes in Japan. That is how it has shaken the very roots of the Giant America.

There are in India also a few Teachers/Professors who are devoted to their work. But they are exceptions. Mr. Damodaran, a teacher in a missionary school at Pondicherry who retired recently was felicitated by the Principal – Paul, who said that Mr. Damodaran has not availed of even a single day leave in his eventful services of 37 years. He has never been late even by a few minutes.

In Gujarat too one can find Mulshanker Bhatt or Natverlal Buch who rarely availed of a holiday. Admitting these exceptions we cannot deny a fact that we all love holidays.

Let us explore how we can reduce the number of holidays and increase the working days.

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(Contd. on page 13)

Academic Staff College Programmes

The Need for a New Model

A. Joseph*

Academic Staff Colleges have been established to provide training to college teachers on an on-going basis throughout the year and this is a substitute for the annual summer/winter institutes for the updating of knowledge in various disciplines. Originally, each Course was divided into 2 sessions so that the participant could have a chance to come back for a review of the project he had undertaken as a result of the training programme. But this was reduced to just one session of 3/4 weeks duration without any provision for follow-up. Any training programme without provision for constructive follow-up procedures is bound to be short-lived just as multiplication of such programmes with a view to impress the public with numbers will be counter productive since these will be organised perfunctorily. A closer analysis of the functioning of these colleges vis-a-vis the courses conducted by them will give us an idea of the gap between the idea and its realisation.

1. There is confusion about the nature of the Orientation and Refresher programmes. While in Orientation Courses 50% of the time is to be spent on awareness of linkages between society, environment, development, Education, Indian Educational System and Pedagogy, Management and personality development, 50% of the time is meant for subject upgradation. In the Refresher Course 50% of the time is to be spent on teaching techniques and strategies, and 50% of the time on subject upgradation. In practice the Orientation Course becomes a course on General Education and interpersonal relationships (since organising subject upgradation for nearly 60 hours for as many as 10 different subjects is difficult) and the Refresher Course turns out to be only subject upgradation (as these teachers consider it a waste of time and a distraction to be thinking about classroom practices). In both courses 60 hours of work are allotted for subject upgradation and 60 hours for classroom strategies, then why should they be called differently? Being called differently the central issue of the teacher-in-the-classroom is lost in both the courses.
2. Since only a few teachers in each institution have been exposed to the new techniques, they are not in a position to implement new approaches once

they get back to their colleges. Regression sets in very quickly. There is the tendency to consider the Orientation and Refresher Courses as a paid holiday to fulfil stipulations for promotion to the next cadre.

3. There is no provision for an organised follow-up of how teachers implement the new ideas. Even an informal attempt at making teachers talk about their classroom experiments and invite comments on them, such as the one tried out in the Academic Staff College of Bharathidasan University through its journal QUEST which offered space for teachers to interact, has met with poor response. Only 3 issues have been brought out so far.
4. In general, there is lack of institutional support for the programmes conducted by the Academic Staff College. Teachers find it difficult to get permission to attend courses during term time and vacations are used for examination valuation work. As a result, not all the teachers within the catchment area are able to benefit by courses conducted in their Academic Staff Colleges.

Proposal for a New Model

1. Collapse the artificial difference between Orientation and Refresher Courses and instead introduce *Teacher Development Courses* with emphasis on the teacher-in-the-classroom.
2. Teacher Development Courses will focus attention on teaching a subject in the classroom which entails both knowledge of the subject, techniques for transfer of knowledge and interactional strategies.
3. Teacher Development Courses can be conducted in each college for 15 days, in the afternoons, thereby leaving the mornings free for regular work in which new techniques may be tried out.
4. Each College can be revisited later on in the year for a formal follow-up work.

Advantages

Advantages of the proposed model over the existing one are :

1. All the teachers in an institution will be exposed to new strategies and there is a fair chance that the new approaches will be accepted by the majority.

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(Contd. on page 13)

Information Services and User Response

Nirmal Malhotra*

Information is the strength of the intellect; it is the vitality of mind. Without knowing where we are, we cannot move forward, we cannot chart out our path. Keeping this in mind information providers collect, process and retrieve information, assuming that it will be of use to the users and they will make use of it. Sometimes in reacting to the users' groups reactions, information providers question themselves, why should we be concerned about consensus? If we evaluate our services in the light of users' problems, we can get answer to this question which quite often troubles us.

There are different reactions from different disciplines and some are common also. Let us see these reactions in the light of information users' problems and information providers' efforts.

While commenting on information services, it is quite often said that there is an under-utilization of information because the information provided is not selective, not comprehensive and irrelevant.

It has been assumed that under-utilization is due to ignorance about the availability of information and unfamiliarity of the information tools and their handling. Librarians gave serious thought to this and started providing user education. Since 1960 (before also) librarians are seriously providing user education with the help of graphics, guides, manuals, orientation and instruction. Now the librarians are working towards the integration of information skills into curriculum and teaching of information skills to the children for the development of skill of learning to learn with the hope to make them lifelong learners.

If we enquire from a librarian who is continuously providing user education about the state of information utilization in his library, I am 100% sure, the reply will be under-utilization. Brittain¹ has rightly pointed out "In fact they (social scientists) are ignorant of information tools but they show a very strong dislike of using them and infact they do not use them effectively". If this is the situation how user education can help them.

Ignorance is not the only reason of under-utilization. As Brittain² has mentioned "In areas of high consensus, information services may have the least to offer. Higher consensus knowledge will already be in textbooks, treatises and manuals, and will be included in the educational and training programmes of professionals. It will also form a part of the conventional wisdom and be

communicated in the informal as well as the formal communication system".

Another general comment of the user group is that librarians are not selective in the material they keep. In other words, information contained in those documents and journals is not of much use. While going through an article in Times Higher Education Supplement,³ I found a very good reply; "Sir Peter accuses librarians of not being selective in the material they keep, Dr. Ratcliffe hits out at "information producers" – that is authors – for deluging libraries with their output."

Moreover, whatever material is acquired by the library is selected by the Book Selection Committee, who are from users group. Information providers are retrieving information from those documents.

Users complain about the information explosion. Information providers on the other hand are trying to cope with knowledge explosion. While retrieving information, information providers try to put before the users comprehensive information with all sorts of cross references they think will be of use for particular subject. In the areas of high consensus it is easy for the information provider to retrieve selective information. Whereas it becomes difficult in the area of low consensus to provide selective information, as it is not clear what is relevant. Brittain⁴ has supported the information providers when he mentioned, "In social sciences there is no general consensus about subject-matter, procedures, methods and interpretation of data. If the experts themselves cannot agree, how can those outside make sense of the reports and findings?".

If we go through the user studies, we find that majority of social scientists are not happy with the formal communication. Some of them believe that informal communication system is more powerful than formal. If you ask them which information tool made them think like this, you will find, they are not aware of the information tools in their own subject.

It does not mean that we are providing perfect services and need not worry about users' problems. Our duty as information providers is, wherever we are working, we must relate the structure of communication and knowledge and the structure of information services with the information needs of our user group. If our users think that information retrieved by us is not relevant or is not selective or they have any difficulty in the handling of information, we must come forward to improve it. Whenever we start any information service or add any information tool to our stock, it becomes

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necessary to introduce it to the users and tell them how to use it. It is always advisable while providing C.A.S. or S.D.I. Services to get feedback from the users. We need develop a good relationship with our users, so that they can tell us "this is what we need" and in response we try to meet their need sincerely and happily. Ours is a noble profession. There are persons who say 'Librarian is a non-formal teacher'. If your services are providing useful information to some of our readers, we must retrieve for some of those with full spirit.

It reminds me of my own experience. We bring out 'Monthly list of Additions' which includes books, documents, journal and newspaper articles and is classified according to areas. It suddenly came to my mind that we must evaluate how useful this is for our users. We stopped bringing out this list. During three months, we received two queries, one from our faculty member and one from Education Adviser in Planning Commission. After 3 months our former director, Prof. M.V. Mathur, rang me up to enquire about it. When I told him the reason, the reply given by him became a sermon for me. He said "why do you worry about those persons who do not want to add their knowledge, I can assure you, they

do not even know, what this list contains. Dr. Maria, information specialist in UNESCO, Regional Office, Bangkok, was enquiring about that. She said 'your list is a book selection tool for the Indian books and reference tool for the education material'. From that day onward, I decided that we will compile and retrieve information if it is of use to even one user. I think if we are providing information keeping in view our users, we need not to be concerned all the time about consensus. Consensus we must leave for subject specialists and practitioners.

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Thinking Aloud –HOLIDAYS

(Cont. from page 10)

One of the first rules or discipline we must accept is :

WORK WHILE YOU WORK & PLAY WHILE YOU PLAY (HOLIDAY WHEN YOU ENJOY).

If we do not accept this work ethics we will be forced by our own conscience if not the society, and we will not be able to deny this:

The X-mas holidays must be completely abolished/or Navratri holidays must be completely abolished The Diwali Vacation needs to be reduced to just a few days instead of 2-3 weeks. The holidays in-between must be similarly reduced if not abolished. The system adopted in some parts is the idea of a Sectional Holiday. A person from a community can opt for some of the days and work on the other optional or sectional holidays.

If the holidays are utilised for the purpose for which they are granted, they can be retained like Gandhi Jayanti must be utilised to hold seminars, group discussions on Gandhian Thought, its relevance today. Raksha-Bandhan, Ganesh Chaturthi, etc. must be similarly celebrated in keeping with the noble cause for which they were introduced by the visionary Tilak, social awareness and consolidating the national integrity.

Such a change will go a long way in developing the right type of atmosphere in an Educational Institution....

(Translated from the original in Gujarati by Hans Bharati of Kutch Vikas Trust, Bhuj)

Academic Staff College Programmes

(Cont. from page 11)

2. Since regular classes are held in the mornings, there need not be a disruption of the routine work for the sake of the courses. Each one's class being available for experimentation, the major thrust in the course could be classroom-centered. During the course itself, the teachers can be familiarised to adopting the new techniques and to the extent possible, some of the difficulties faced by them could be solved through advice from the experts and discussion among peers. This can be an informal beginning of the follow-up work, very much needed for the success of any training programme.
3. There will be a considerable reduction in the expenditure for conducting such course, since only the Resource Persons will have to be paid.
4. Colleges which have peculiar problems will be helped with special strategies and these teachers will be freed from the compulsion of being compared with colleges in better circumstances which often leads to frustration and lethargy.

In general, this form of reaching out to all the teachers in their own colleges, without disturbing their normal routine will help in the transformation of the institution as a whole, which hopefully, will encourage teachers to think in a fresh manner about their profession.

Cattle Wealth of India

"Twenty percent of the world cattle population and fifty percent of the buffalo population are in India. India is also sixth in terms of sheep population among the countries of the world. The population of the economic livestock species has increased considerably over the past three decades," said Dr V.L. Chopra, Director General, Indian Council of Agricultural Research. Dr Chopra was delivering the Convocation Address at the second convocation of the Tamil Nadu Veterinary and Animal Sciences University, Madras. Dr Chopra, however, added, "To achieve the desired production targets through genetic manipulation and improved management, it is essential to complement it with massive livestock health coverage programme which should involve disease reporting, quick and precise diagnosis, disease surveillance and monitoring, evolving suitable strategies of disease control and their effective implementation. In addition, we have also to guard against constant threat of introduction of exotic diseases into our country." Excerpts

Some of our friends from developed countries have held the view that the introduction of high technology research and training in developing countries is not necessary; they should be encouraged to concentrate on applied research based on proven models in the developed countries. I have on the other hand held the view that appropriate technologies, particularly frontier technologies, are needed more in the developing countries where the problems are acute and need quick and cheap solutions in view of the prevalent unstructured system. Two examples which are of consequence and relevance to veterinary science are (i) Embryo Transfer Technologies to quickly multiply genetically improved superior females and males given the fact that framework of a structured performance recording system in the field does not exist; (ii) development of superior, cheap and safe vaccines and diagnostics using genetic engineering as the major inputs for animal health protection.

Livestock Populations, their Dynamics and Products

Livestock constitute an integral part of agriculture in the developing

world. More so in India, because of their major input of motive power which will remain essential for agricultural operations for small holders and for transport in village. Bullocks account for 49,000 MW of power used for food production annually. Cattle provide essential animal proteins for human diet through milk and meat. Animal fibre accounts for a large component of clothing. Animal excrement is used as a source of energy through direct burning or through biogas and as plant nutrients in the form of farm yard manure.

Twenty percent of the world cattle population and fifty percent of the buffalo population are in India. India is also sixth in terms of sheep population among the countries of the world. The population of the economic livestock species has increased considerably over the past three decades.

The country has rich livestock genetic resources as is reflected by 26 breeds of cattle, 7 breeds of buffaloes, 40 breeds of sheep, 20 breeds of goats, 4 breeds of camels, 6 breeds of horses, 3 breeds of pigs and 18 breeds of poultry. The world's best breeds of dairy buf-

faloes, excellent draught/dual purpose cattle, carpet wool sheep and highly prolific goats best adapted to the tropical heat, diseases and relatively poor feed resources are available in our country.

The contribution of livestock sector to Gross National Product (GNP) is around Rs. 2163.10 million per annum accounting for about 24% of the output from Agriculture Sector. This does not however, include farm energy supplied by animals. Livestock sector has a large contribution to generation of the employment opportunities which constitutes an important element in the rural development programme.

Impressive progress has been made in the livestock production during the last 40 years particularly in case of milk, meat, wool and eggs.

Plan	Base year of plan	Production			
		Milk (MMT)	Egg (MN)	Meat (MMT)	Wool (MKg)
1st Plan	1950-51	17.0	1832		27.5
7th plan	1984-85	41.5	14252	1.1	38.0

The Seventh Plan envisaged an annual growth rate of 4.5, 6.8 and 2.1% for milk, egg and wool production, respectively. The targets have been exceeded. Broiler production which was nonexistent during 1950-51 has touched a level of 100 million birds during 1987-88.

In spite of these impressive achievements over the past three decades, our achievements are not commensurate with assets we hold. Production losses caused by various diseases of livestock are large. Broadly, this loss may be divided into two categories, (i) loss of produce and (ii) loss of draught power. To prevent production losses and to preserve the precious livestock wealth, several measures have been taken. These have substantially reduced the incidence of diseases and the consequent production losses. The incidence of Rinderpest was reduced from 1960 cases per million bovine population in mid fifties to 40 cases during 1985-88. Haemorrhagic septicaemia from a level of 33,700 deaths (1949-53) to 3,969 now, Black quarter from

a level of 27,500 deaths in 1951 to 2,354 and Anthrax from 2,648 deaths (1962-67) to 633.

To achieve the desired production targets through genetic manipulation and improved management, it is essential to complement it with massive livestock health coverage programme which should involve disease reporting, quick and precise diagnosis, disease surveillance and monitoring, evolving suitable strategies of disease control and their effective implementation. In addition, we have also to guard against constant threat of introduction of exotic diseases into our country.

Prior to 1947, there was no national programme for control of livestock diseases. Since then national programmes for Rinderpest, Tuberculosis, Brucellosis, Contagious Bovine Pleuro pneumonia, Rabies, Enterotoxaemia, Swine fever, Fowl Cholera and Pullorum diseases have been taken up. Facilities for disease investigation have been developed at about 250 Diagnostic Laboratories in the country. ICAR has established an AICRP on Animal Disease Monitoring & Surveillance, Blood Protista and a Centre of Animal Disease Research and Diagnosis at IVRI, State Agricultural Universities have been linked to this grid. The establishment of High Security Animal Disease Laboratory at Bhopal having P₃ level containment facilities will provide a unique Laboratory of its kind in whole of the South East Asia for research and training on exotic micro-organisms not native to India but holding potential threat of entry. Eradication of African horse sickness and Equine influenza are landmarks in the history of livestock health programme. Four Animal Quarantine and Certification Stations (Bombay, Calcutta, Madras & Delhi) have been established in recent years. Two more stations are being established in coastal areas i.e. Kandla and Cochin. Recently, with the assistance of EEC, RP Zero Programme

alongwith strengthening of veterinary services has been launched.

In spite of these efforts, the disease investigation and control programmes have not yielded desired results because of several serious limitations. Some of major limitations are :

1. Non existence in practice of a national disease reporting system.
2. Inadequate disease investigation facilities.
3. Shortage of trained manpower in critical areas.
4. Inadequate vaccination coverage.
5. Inadequate cold chain facilities for maintaining the effectiveness of the vaccines.
6. Unrestricted movements of animals and poor quarantine facilities.
7. Lack of desired appreciation by livestock owners of the loss due to the diseases.

The New Possibilities

Biotechnology related to Animal health Protection

The most cost intensive factor is the maintenance of cold chain for vaccine storage. It is, therefore, necessary to look for possibilities to develop technologies, which can avoid these costs and make vaccines, cheap and safe.

The second major revolution in biology started in 1953 when Watson and Crick unravelled the structure of DNA and called it the vehicle of heredity. By early 80's, the application of molecular biology to technical and industrial processes became a reality. It ushered in a new era in which biological systems could be deliberately planned and directed modifications in living organisms could be obtained by in-vitro modifications of the genetic material, utilizing recombinant DNA techniques. Other novel techniques like cell fusion, hybridoma technology somatic cell culture, etc. have also become operative realities.

The development of bioreactors for in-vivo and in-vitro systems interfaced with production processes to develop newer vaccines and products as techniques for application to human and veterinary health protection become cost effective and safe. This has brought about a revolution making health protection a reality in the developing world.

One of the major diseases in developing countries is Rinderpest. The primary work of the Japanese Scientists in developing heat stable recombinant Rinderpest vaccine utilising vaccinia virus, as a vehicle for genes coding for immunogenic proteins like H, N and P of Rinderpest virus has opened up a new field in vaccinology. This vaccine has also been developed and tested in the USA by Yilma and his group since 1988. These two vaccines have been accepted as potential candidate vaccines for protection against Rinderpest where cold chain can be completely avoided. The OIE has established PEER group under its aegis to monitor the testing of these vaccines. It is likely that a vaccine will be available for field use by 1997 to eradicate Rinderpest, like Smallpox, from the world. At IVRI, scientists are investigating the possibility of using sheep pox as the vector for Rinderpest as an alternative route.

The Foot and Mouth Disease virus is another major virus disease for the control of which molecular biology is being explored as a means of solving the problem. Because of the complicated genetics involved in this virus, it has not been possible to make a breakthrough as has been done in the case of Rinderpest. FMD virus has 62 distinct sub-types and homologies between the virus sub-types are around 80%. Recombinations in this virus are fairly common and, therefore, a single sub-unit vaccine has remained only a possibility. Efforts have been made to develop a peptide vaccine based on a sequence (146 to 176) which codes for immunogenic VP₁ protein which gives a fair degree of im-

munity. IVRI at its Bangalore Centre has evolved a sub-unit vaccine against A22 and ASIA-I strains which is currently under test. Since, only 5 sub-types are available in the Indian subcontinent, we need to develop a rapid diagnostic kit based on mab's. IVRI has developed a mab kit which can diagnose types and sub-types within eight hours so that a control programme can be launched within 12 hours of outbreak.

Retro viruses of Lenti group are enveloped single stranded DNA's and pose a serious hazard like human immuno deficiency, HIV III; for which no vaccines are as yet available. Caused by the same group of virus of animals we have equine infectious anaemia, visna and maedi in sheep, caprine arthritis encephalitis in goats, for which we do not have any vaccines till date. The only method to control them is early detection followed by enforcement of zoo sanitary measures with simultaneous slaughter of infected and susceptible animals.

Biotechnology related to Animal Production

Much has been achieved globally in this area. The isolation of animal growth hormone and cloning it into vectors/microbes to produce large quantities of such growth hormone protein rapidly and economically has been achieved. One such protein, bovine somatotropin (BST), in particular, has been shown to accelerate animal growth, improve feed efficiency and milk production. The porcine somatotropin (PST) not only stimulates growth rate and improves feed efficiency but also produces more muscle rather than fat in the animal.

In view of the fact that animals are efficient bioreactors – converting feed into milk and meat proteins it should be possible to develop genetically tailor made animals (transgenics) and use them to produce high-priced therapeutics and pharmaceuticals, vaccines, drugs, peptide hormones and monoclonal antibodies. Work in this area needs to be encouraged.

In order to make embryo transfer an associated technologies as major instruments of dam and sire improvement programme, it is necessary that we should concentrate on improving the rate of recovery of embryos per flush. This is particularly necessary in the case of buffaloes. The process of in-vitro fertilization, maturation and transfer should be perfected in buffaloes where we do not have the kind of success as we have had in the case of cattle. In this area, therefore, our inputs in research have to be very substantial as support from developed countries will not be forthcoming. ICAR has a major focus in this area during the 8th Five Year Plan and I hope that by the end of the 8th Five Year Plan our techniques for buffalo embryo biotechnology would have reached a stage where it could become a commercially viable technique.

Biotechnologies related to Processing

The biotechnological advances made in the dairy processes have been extensive. We are, in fact, at the threshold of still wider and elegant applications and the future looks bright. The biotechnological applications range from improved quality of milk and milk products and more active and versatile starter cultures. Efficient and economic utilization and disposal of dairy wastes and byproducts present challenges which need to be met in the nineties.

The search for a microbial rennet from sources other than calf stomach resulted in the isolation and use of this enzyme from *Mucor mehei* and *Mucor pusillus*. India was perhaps the initial proponent of a microbial or vegetable rennet to satisfy the cheese demand of its vegetarian population, since rennet normally used in the manufacture of cheese is extracted from the forestomach of calf and is not acceptable for ingestion by vegetarians. In this area another milestone was reached when the U.S. Food & Drug Administration (USFDA) granted GRAS (generally recognised as safe) status to Chymosin, a rennet, obtained from genetically engineered

Escherichia coli by Gist Brocades Co. of Holland. At the present time FDA is considering preparations from genetically engineered *Kluyveromyces marxianus* and *Aspergillus niger*, developed by Gist Brocades and Geneneer, respectively.

The most extensive biotechnological advances have been made in the development of lactic cultures for use in the manufacture of dahi, yoghurt, cheese and other food products. These lactic cultures multiply more rapidly even in the presence of inhibitory substances like antibiotics, sanitizers and pesticides, producing unique flavour and metabolite combination, which are phage resistant and produce natural bacteriocins to prevent the growth of spoilage or toxinogenic micro-organisms.

Message

My message is that our veterinary strategy must become more knowledge intensive, more mindful of economizing resources and more scientific. This calls for a system which, by and large, should be structured by flexible enough to face the changing scenario of global perspectives in biology. This has become more critical in veterinary sciences because of its vast challenge in providing animal health protection so as to improve production. This would call for basic changes in the format of curricula at Undergraduate as well as Postgraduate level. It would call for procedures which are flexible enough to make quick adjustments to newer needs. It is my hope that this University will carry forward this message and meet the challenges of the time so that animal health protection can really influence the levels of animal production making this sector a major service sector for employment and wealth generation. Your University has an outstanding record of commitment combined with excellence. You have made significant achievements since the inception of Madras Veterinary College. I think, however, the best is yet to come.

Cost Effectiveness of Open Universities

Mr. C. Aranganayagam, Tamil Nadu Education Minister, said that multinational universities, like multinational corporations, were already on the horizon, and already a few open universities had enrolled students from other countries or established centres there. He was inaugurating a three-day seminar on 'cost effectiveness of open universities in Asia' organised by the Indira Gandhi National Open University (IGNOU) and the Anna University in Madras recently. The seminar was co-sponsored by the Indira Gandhi National Open University, New Delhi, World Bank, Commonwealth of Learning Canada, and Anna University. He referred to the marketing in other countries of the instructional material produced by some open universities and said this had the potential for transforming the world of education. 'Now we see the prospects of universities in advanced countries moving to the students in developing countries,' the Minister added.

The prospects of IGNOU making available some of its courses to the students and teachers in Mauritius are bright now. The Government of Mauritius and the Union Government were negotiating for the same, he said. The United Kingdom Open University had many students in Europe registering for its courses. Since huge amounts had to be invested in preparing instructional material for distance education (DE), cost effectiveness can be ensured only if large numbers of students are enrolled. In many developing countries it would be prudent to buy instructional materials rather than develop them indigenously, Mr. Aranganayagam said.

Many barriers existed between the conventional and the DE systems. Higher productivity and greater flexibility were virtues found in the DE system which also represented the transformation of educa-

tion from the craft to the technology stage, he said.

Prof. G. Ram Reddy, Chairman, UGC, who presided, referred to the increased opportunities for higher education at low cost to the states afforded by open universities. However, this could not be at the expense of quality and unfortunately DE institutes in some universities were treated as milch cows by their parent organisations. He wanted the surplus generated by DE to be ploughed back for improving the quality of education. Those who went to DE institutions were generally disadvantaged people.

"It is immoral and unethical to divert funds collected from such sections of society to the conventional system where more privileged sections of society study," he said.

The Central Advisory Board of Education (CABE) in India had recommended the setting up of one open university in every major state. There was no competition between the conventional and the open universities since the former looked after the young students and the latter those who for some reason could not go to the conventional system. The open university should meet the demands of various social groups such as workers, women, minorities and people in remote areas, Prof Reddy said.

Dr. V. Selvaratnam, higher education specialist with the World Bank said with growing demand for higher education, distance education had evolved in various forms over the past two decades, particularly in countries like India, Thailand, Sri Lanka, Indonesia, China, the Philippines and Malaysia. Developing countries needed human resources development for economic development but faced with resource constraints, had found distance education to be a cost-effective method.

Dr. Selvaratnam said the Bank had so far given over \$20 billion aid

to education and allied social sectors in various countries. Of this, 25% had gone to higher education.

Observing that it would be unfair to paint a full rosy picture of distance education, he said there were two problems which were of particular concern to developing nations.

First, the technology of distance education was changing so fast that it needed enormous capital investments in the purchase of hardware, software and the like. The technology would determine the cost and scope of the distance education's delivery network, he said.

Second was the need to constantly monitor and update the courses offered through distance education, he said, adding, good professional planning was needed to make it successful.

Dr. Ram Takwale, Vice-Chancellor, Yeshwantrao Chavan Open University, Nasik (Maharashtra), referred to certain special features of the DE system.

Dr. M. Anandakrishnan, Vice-Chancellor, Anna University, welcoming the participants, said the open universities had necessarily to address some special needs of the emerging society.

The seminar was attended by representatives from India, Sri Lanka, Thailand and Canada.

Bureaucracy & the Politicians

The Department of Public Administration of Kurukshetra University recently organised an Inter-disciplinary Seminar on 'Bureaucracy and Politics in India'. Inaugurating the seminar Dr. S. Arya, Vice-Chancellor, expressed his concern at the growing politicisation of the civil servants and the bureaucracy in India. He pointed out that the utility of the civil service had been eroded with the growing tendency of the political executive to change and transfer the permanent civil servants immediately after the change of Government or the Minister. This had affected not only the morale of the civil servants but also the

capacity of the bureaucracy to carry out the tasks of development and nation building, he opined. This is high time that both the bureaucracy and the political executive realise their respective roles to work in collaboration with each other and not at cross-purposes. Dr. Arya also expressed his concern over the growing phenomena of nexus between bureaucracy, politicians and the criminals. He exhorted the scholars gathered at the seminar to make some deep researches in the relationship between the politicians and administrators in the country to make them a viable instrument for socio-economic and political development.

Prof. Hoshier Singh, Chairman of the Department of Public Administration, explained the objective of the inter-disciplinary seminar and said that the scholars should discuss about the relationship between the politician and bureaucracy; to what extent to the bureaucracy should be politicised?, to whom it should be committed?, from which strata of society they are coming?, to what extent bureaucracy is playing its role in nation building, etc., to what extent the nexus between politician, bureaucrats and criminals has harmed to society?

In his keynote address, Prof. R.B. Jain of the Department of Political Science, University of Delhi, suggested that power was a undeniable important component in the interaction between political executive and career civil services in contemporary industrialised democracy.

He said that little theoretical development had occurred concerning relationship between civil service and political executive. Prof. Jain outlined five different theoretical models – The Formal Model, The Village Life Model, The Function Model, Adversial Model, and the Administrative State Model as discussed by various scholars in order to categorise various types of relationship existing between the servant and the politician on a global basis. All these five models indicate that at the levers of power in the modern government are two groups of persons – the politicians and professionals. Elaborating the

civil servant-Minister relationship in India since independence, Prof. Jain observed that under the able leadership provided by Sardar Patel and Pt. Jawaharlal Nehru, the administrators and technocrats were able to create the structure of a modern state whose guiding tenet was socialism. However, the change in political milieu after the death of Lal Bhadur Shastri in 1966, brought Mrs. Gandhi to power on a shaky basis. The party politics of defection started in 1967 put a premium and a price with the defecting MLAs and MPs. Money and repressive power of the government were openly used in this political game.

Prof. J.R. Siwach, emphasised the concept of neutrality in working of the democratic polity. Dr. R. K. Sapru pointed out that our policies were being prepared by the United Nations and outside agencies. Prof. Veer Singh and Dr. P.S. Verma were of the opinion that after independence production had increased but distributive justice which was done by bureaucracy was lacking. On the other hand, Dr. Harbans Pathak, Head, Dept. of Public Admn., Punjabi University pointed out that bureaucracy had been politicised and cited the cases of Gopi Arora, T.N. Sheshan, B.G. Deshmukh and Vinod Pandey. He suggested particularly in area of transfer and placement, a committee of eminent persons be constituted. Dr. S.L. Kaushik of Panjab University, said that both politicians and civil servants should realise that they exist for the service of the people. Prof. Ranbir Singh of Political Science Dept., Kurukshetra University suggested the utility of Riggs and Heady's model in our country while Dr. Mohinder Singh of Public Admn. Dept. suggested that only a strong will and moral value could solve the problems of politics and bureaucracy.

Prof. B.S. Khanna, former Head, Dept. of Public Administration, Panjab University, observed that the departments of Public Administration and Political Science should act as think tanks for remedial measures for politico-administrative system of the country.

PG Diploma in Forensic Engineering

Anna University, in collaboration with the State Department of Forensic Science, proposes to introduce a part-time postgraduate diploma course in forensic engineering in January.

The emerging field of forensic engineering trains engineers to look at issues involved in failure of an engineering system and come to a conclusion whether it was due to natural causes, human negligence, disregard for quality or criminal intent, said the Anna University Vice-Chancellor, Dr. M. Anandakrishnan in Madras recently.

With an initial intake of about 25 candidates, the course will cover topics like legal aspects of forensic engineering, principles of failures, accident investigation and risk analysis.

Dr. P. Chandra Sekhrran, Director, Forensic Sciences Department, Madras, said the faculty and students of the new course will utilise the facilities and expertise of both Anna University and the Forensic Sciences Department.

Prof. Nagabushana Rao, Professor of Civil Engineering, College of Engineering, Guindy, said the growing consumer protection movement in the country necessitated scientific training of engineers to fix responsibility for system failures and damages resulting from them.

Admission to the PG Diploma will be open to B. E. degree holders in any branch of engineering, giving preference to in-service candidates deputed from Government, quasi-Government, or private institutions.

The three semester course, which is followed by eight weeks of project work, has a curriculum of five core subjects, and a number of electives.

Video Facility at IGNOU

A major audio, video facility for the production of educational programmes will be set up soon on the campus of the Indira Gandhi National Open University (IGNOU), New Delhi, with assistance from Japan. This was revealed by Dr. V.C. Kulandai Swamy, Vice-Chancellor,

IGNOU in Madras recently. The project costing Rs. 42 crore may reach fruition by 1993.

The facility will be assisted by the Japan International Cooperation Administration and an agreement for the purpose is likely to be signed soon. This is a turn-key project with buildings and equipment coming under Japan's responsibility and as a national facility, it will be used by other open universities as well.

An institute for training distance education (DE) staff is also being set up with the aid of the Commonwealth of Learning (COL) on the IGNOU campus to train the staff for open universities. This will start work before the end of this financial year. Already three experts trained abroad by the COL would constitute a mobile training team, Dr. Kulandai Swamy said.

IGNOU has accepted responsibility for developmental funding of the other open universities in the country. At present, there are five such State level institutions in Andhra Pradesh (Hyderabad), Rajasthan (Kota), Maharashtra (Nasik), Bihar (Patna), and Madhya Pradesh (Bhopal) with the possibility of one more coming up soon in Karnataka.

Dr. Kulandai Swamy said that a distance education council had been created with guidelines for the funding process.

About the seminar on cost effectiveness of open universities in Asia which concluded recently, he said the World Bank wanted a study with respect to two aspects: social demand and cost effectiveness. The discussions were conducted on the basis of the papers already presented although some difficulties cropped up while identifying social demand, Dr. Kulandai Swamy added. The deliberations will form the basis for the production of a major policy paper on education being prepared by the World Bank.

Interpreting Indian Philosophy

The Department of Sanskrit of the Calicut University recently organised a seminar on 'Bharateeya Darsanam'. The Seminar was inaugurated by Dr. A.N.P. Ummerkutty, the Vice-Chancellor and presided

over by Prof. V.J. Pappu, the Pro-Vice-Chancellor.

The noted Marxian thinker, Mr E.M.S. Namboodiripad, in his keynote address asserted that Indian Philosophy was a confluence of different currents like Hinduism, Jainism, Buddhism, Islam and Christianity. It is not correct to say that it is exclusively Hinduistic. It also encompasses the progressive thought of great nationalist leaders like Swami Vivekananda, and Mahatma Gandhi. Swami Vivekananda, who predicted the emergence of a world order with Sudras as the dominant class belies the stereotyped interpretation of Indian Philosophy as essentially spiritual and shows how materialistic strains have influenced it. The materialistic undercurrents in Indian thought, though ultimately overpowered by idealism, nevertheless represented the aspirations of the working classes of India and was indeed a powerful strain of Indian culture, he asserted. The triumph of idealistic philosophy over materialism symbolises the victory of the ruling classes over the working masses in Indian History.

Mr. Namboodiripad maintained that nothing except change is changeless in the world order envisaged by Marxism and the recent developments in the socialist world signal only the process of renewal and re-anchoring. He welcomed the interaction of diverse ideas in the interpretation of Indian culture.

Mr. Parameswaran, Director, Bhartiya Vichara Kendra, argued that attempts to interpret Indian thought on Marxian lines were bound to fail and only helped to reveal the inferiority complex of Indian marxists. He maintained that spiritualism was not antithetic to materialism. An Indian vision is necessary to understand Indian Philosophy. While Western Philosophy is based on intellect, Indian Philosophy is based on vision and experience. There was no class-struggle or reflection of the same in philosophical domain as is made out by Marxian thinkers. If materialism perished in India, it was largely because of its own inherent weakness and not because of idealistic persecution, he asserted.

Dr. K.N. Ganesh, in his paper pointed out that history revealed through scientific tools of interpretation clearly rejected the notion of Indian Philosophy as the outcome of a harmonious evolution. History proper, which has to be meticulously separated from our myth-making tendency, definitely shows the ideological clashes which were at work even from ancient times in India and Indian Philosophy symbolically represents these divergent forces.

Dr. N.V.P. Unithiri countered many arguments of Mr. Parameswaran and maintained that Indian Philosophy evolved and developed out of the ideological struggles of opposing forces. Quoting profusely from Sanskrit sources, he asserted that materialistic strains were very powerful in Indian thought in its early phase as revealed in the Philosophy of Lokayatikas and Sankhyas. Interpreting the whole of Indian thought as essentially spiritual would be at variance with facts he concluded.

Declamation Contest on Population Explosion

Kurukshetra University, through its FPAI Population Education Club, organized Haryana State level declamation contest on the theme "Population Explosion: A Threat to Ecology and Environment."

Inaugurating the programme Professor S.D. Sharma, Chairman, Law Department, observed that protection of the environment was not merely a concern of any particular country but it was a necessity for the survival of mankind. He pointed out that Ganga was one of the purest rivers of India, but today it is one of the most polluted rivers because of population growth and as most of the drains of the industrial towns fall in Ganga that made it most toxic.

Professor S.K. Singh, Dean Students' Welfare, and the Chairman of the Club, in his keynote address observed that voluntary sector had a vital role to play in protection of environment and controlling population. He remarked that the desired results could not be achieved merely by enacting the laws. The movement of population control and environment protection must be reinforced by public opinion.

In his valedictory address the Vice-Chancellor, Dr. S. Arya, observed that Youth in general and students in particular have the key to the success of population control as well as of environment and ecology protection programmes. They have vast energy which should be channelised by the universities and colleges to make them perfect citizens of India. The true meaning of education is not achieved by awarding mere degrees to students. It should be to promote overall development of their personality.

Karnataka Wakf Scholarships

The Karnataka Wakf Board has decided to award merit scholarships to 1,000 Muslim students in the State to pursue their studies. According to the State Minister for Higher Education and Wakf, Mr S.M. Yahya, the scholarships would range between Rs. 3,000 and Rs. 10,000 per year, depending on the educational level.

Efforts would be made to consolidate and involve the Muslim community in national reconstruction, Mr Yahya said.

The Decade Before Independence

A two-day National Seminar on the "Final Stage of the National Movement - The Decade Before Independence" was recently held at the University of Calicut.

Sponsored by the Indian Council of Historical Research, New Delhi in commemoration of the 50th year of the Quit India Movement, the Seminar was inaugurated by Mr. E.M.S. Namboodiripad, an eminent freedom fighter and former Chief Minister of Kerala. In his address Mr. Namboodiripad stressed the role of masses in the Quit India Movement during the last decade of the freedom movement. Mr. K. Kunhirama Kurup, who presided over the inaugural session, highlighted the role of the socialist movement in bringing Independence to India.

Papers were presented on various aspects of freedom struggle in South India during the decade before Independence. The resource persons discussed the problems of the studies related to the Freedom Movement. A Committee was constituted to bring out a major reference work on "A Comprehensive History of the Freedom Movement in South India" to be released by the end of 1993.

He said the north-western region particularly Punjab and Haryana, which had 10 percent of the total cultivable land, were contributing their surplus grains to the Central pool, while the rest of the country continued to remain deficit in food production. This had resulted in a 'very narrow food security gap' between production and consumption.

Describing the food scenario of the next century, he said 'we have to achieve a food production of 210 million tonnes in the Eighth Plan, 245 million tonnes in the Ninth and 285 million tonnes at the close of the Tenth Plan'. The per capita food consumption would also rise from the present 196 kg. to 245 kg. at the dawn of 2000 A.D., he estimated.

Referring to sugarcane production, Dr. Radhawa said that the total area under the crop had gone up to 1.4 lakh hectares and the production percentage to world output had also increased from 18.8 to 22 in the last few years, but the yield continued to be static at 60 tonnes per hectare. India ranked ninth among the sugarcane growing countries in general and second in respect of those in the tropical region.

On the problem of agriculture in coastal areas, he advised the resolution of the conflicts between land use management and water management. Proper flow of the used water in irrigation canals should be ensured to keep the salinity at the lowest in the tail-end regions. Mangrove cultivation and marine and inland fishing should be encouraged to help the coastal farmers.

The agronomist called for micro-level planning to improve the overall food yield by scientific farming and better water management practices. 'And in this, the agricultural scientists had a great role to play. Gone are the days of research in isolation; we need a multi-disciplinary approach now to meet the situation', he said.

Dr. M.V. Rao, Vice-Chancellor of APAU, who presided, pinpointed the loopholes in the farm sector and wanted an all-round effort to set right the lacunae.

News from Agricultural Universities

Static Agricultural Growth in South

Agricultural growth has more or less remained static in the southern States for quite a long time and this should be a matter of concern not only to the State Governments but also to farm scientists, said Dr. N.S. Randhawa, former Director-General of the Indian Council of Agricultural Research, while delivering the second Adusumalli Gopalakrishnaiah and A.V. Raghava Rao endowment lecture, jointly organised by the Sugar Growers Association of the KCP Limited (Yuyyuru) and the Andhra Pradesh Agricultural University. Dr. Randhawa said that farm production in Tamil Nadu was stagnant for the last two decades, in Karnataka for the last 17 years and in Kerala it

was always fragile. Though agriculturally very sound, Andhra Pradesh could register only a marginal increase in growth, he added.

Dr. Randhawa attributed this to the existing pattern of food production and perceptible shift from food crops to non-food crops.

While the consumption of nutrients has been steadily on the increase in the State, it was not reflected in the total yield of food production. Possibly these fertilizers are being diverted to commercial crops. Similarly, power consumption in the farm sector has also gone up substantially, but is not commensurate with actual food product.

World Bank Projects for HAU

The World Bank has allotted to the Chaudhary Charan Singh Haryana Agricultural University an ambitious project to upgrade the skill and capabilities of scientists, teachers and extension workers of the university. According to the Vice-Chancellor, Dr. A.L. Chaudhry, the Bank had also sanctioned another Rs. 1.03-crore project, for developing vaccine for control of serious diseases of livestock.

The university has also decided to double its seed production from next year, Dr. Chaudhry said. Special emphasis was being laid on improving soil health through biological methods instead of fertilizers.

Dr. Chaudhry said HAU would collaborate with Pantnagar Agriculture University for new varieties. The university had adopted three villages in Sirsa district. The scientists would supervise the field operation right from sowing to harvesting the crop.

NARP Regional Workshop

The two-day National Agricultural Research Project (NARP) Regional Workshop of North Region, organised at Chaudhary Charan Singh Haryana Agricultural University in collaboration with the Indian Council of Agricultural Research (ICAR) discussed in detail several issues linked with the implementation of NARP programme in Agro climatic zones of North.

Dr. A.L. Chaudhry, Vice-Chancellor, CCS HAU, who inaugurated the Workshop, said that NARP had enabled the state agricultural universities in upgrading and strengthening their regional research capabilities permanently with the result that need based and location specific production oriented research had been given a boost. Dr. Chaudhry added that in spite of the location specific and need based technology developed for different regions, disparities still existed between different agro-climatic zones and the rainfed areas had not yet witnessed any green or white revolution. He advised the participants to lay special emphasis

on integrated farming system approach including animal, tree and crop components.

Over 50 delegates from Agricultural Universities of Punjab, Himachal Pradesh & Jammu & Kashmir besides Haryana attended the workshop.

Japanese Delegation Visits HAU

To study the achievements obtained in the field of animal production and development and also to explore the possibility of using Indian elite species in their country, a Japanese delegation of senior experts headed by Dr. Yoshihiro Yamashita, Advisor, Association of Livestock Technology, Japan and former Director General of National Livestock Breeding Centre recently visited the Chaudhary Charan Singh Haryana Agricultural University and Central

Institute of Research on Buffaloes (CIRB). The visiting experts were taken round the College of Animal Sciences and Veterinary Sciences and held detailed discussions with the experts.

The Vice-Chancellor, Dr. A.L. Chaudhry informed the visiting experts that the university was developing elite herd of milching animal and poultry. He said that animal husbandry contributed 20 to 25 percent of the gross national product (GNP) and the discipline of veterinary and animal science were given importance equal to agriculture. The Vice-Chancellor added that under the commercial farming project being implemented around Delhi, Haryana was establishing a very efficient and strong marketing system of dairy husbandry.

News from UGC

Countrywide Classroom Programme

Between 22nd January to 30th January, 1993 the following schedule of telecast on higher education through INSAT-1D under the auspices of the University Grants Commission will be observed. The programme is presented in two sets of one hour duration each every day from 1.00 p.m. to 2.00 p.m. and 4.00 p.m. to 5.00. The programme is available on the TV Network throughout the country.

Ist Transmission

1.00 p.m. to 2.00 p.m.

22.1.93

"Tall Fathers and Short Sons - II"

"A Discussion on Secularism"

"Loktak Lake in Peril"

23.1.93

"Puppetry - II : The Art of Dexterity"

"Pagati Vesam"

"The Week Ahead"

24.1.93

No Telecast

25.1.93

"Facing the Future - II"

"Of Figures and Columns -
The World of Chartered
Accountants - I"

"Human Resources Management"

26.1.93

No Telecast

27.1.93

"Data Structure - I : Stack"

"Cyclones - I : When Disaster
Strikes"

"Tumba - A Plant with Future"

28.1.93

"Carbon Flies"

"Colourful World of Minerals"	23.1.93	"The Precious casket"
"Brain and Language Problems : Aphasia"	"Theatre in Society – III From a Women's Point of View"	"The Rhineland Cultural Scene"
29.1.93	"Vision-Beyond Sight"	"The Precious casket"
"Statistics – I"	"The Week Ahead"	"The Rhineland Cultural Scene"
"Seeing is Believing or Believing is Seeing"	24.1.93	28.1.93
"Applied Geochemistry – Environment"	No Telecast	"Buried Treasure : Boron – Light Heavy Weight"
30.1.93	25.1.93	"The New Narrtive of Latin America – I"
"More Than a Rock"	"Home Lab. in Electricity and Magnetism"	29.1.93
"The Pursuit"	"Promoting Entrepreneurs – An Interview"	"Disputed Paternity"
"The Week Ahead"	"Techniques of Demand Forecasting – I"	"Evaluation – II"
Ind Transmission 4.00 p.m. to 5.00 p.m		"The Visual Environment and Behaviour – II"
22.1.93	26.1.93	30.1.93
"Personal Identification"	No Telecast	"More than a Rock"
"Evaluation – I"	27.1.93	"The Pursuit"
"The Visual Environment and Behaviour"	"Muddle Fuddle"	"The Week Ahead"



IGNOU

INDIRA GANDHI NATIONAL OPEN UNIVERSITY (IGNOU) invites applications for the following posts : Assistant Engineer -1 (SC) Rs.2200-4000; Programmer-5 (SC-2, ST-2, Gen-1) Rs.2000-3500; Technical Assistants-4 (SC-2, ST-1, Gen-1) Rs.1640-2900; Set Designer-2 (SC-1, Gen-1) Rs.1640-2900; Junior Graphic Artist-2 (ST-1, Gen-1) Rs.1640-2900; Assistant Programmer-6 (SC-3, ST-1, Gen-2) Rs.1600-2660; Make-up Assistant-1 (Gen-1) Rs.1400-2300; Junior Translators-2 (ST-1, Gen-1) Rs.1400-2300; Computer Operator Grade-I - 7 (SC-1, ST-1, Gen-5) Rs.1350-2200; Computer Operator Grade - II -12 (SC-3, ST-4, Gen-5) Rs.1150-1500; Junior Assistant-cum-Typist - 17 (ST-17) RS.950-1500.

Application forms and detailed information may be had from the Registrar (Admn), IGNOU, Maidan Garhi, New Delhi-110 068 on payment of Rs.25/- by general candidates and Rs.15/- by SC/ST candidates by Demand Draft drawn in favour of IGNOU, on a written request and enclosing a self-addressed envelope of size 13 cms x 28 cms. Last date for supply of application forms and information is 1st Feb. 1993. Last date for receipt of completed application forms is 15th Feb, 1993

Advt No.8/Rectt./92-93

REGISTRAR

Monumental – in Size and Errors

R. G. Prasher*

Gupta, B.M., ed. Handbook of Libraries, Archives & Information Centres in India. V. 11 + 12 : Libraries, Archives & Information Technology; an Annotated Bibliography, 1970-90. Delhi, Aditya Prakashan, 1991-92. Pp 454 + 474. Rs. 500/- each.

Library and Information Science (LIS) literature in India opened its account in 1898 with Imperial Librarian John Macfarlane's book *Library Administration*. LIS periodical literature originated in 1913 with the publication of the *Library Miscellany*, the first journal. With the advent of S.R. Ranganathan upon the Indian library scene in 1924, the slow growth rate became comparatively fast. It is estimated that the present average annual output of LIS literature in India is about 50 books and approximately 300 papers. This, however, does not include theses and dissertations, reports, lectures, occasional papers, etc. We have come a long way since Macfarlane and now Indian LIS literature has grown in size and is steadily and continuously expanding.

A modest effort towards the documentation of Indian LIS literature was made by P.N. Kaula. Another significant work was Dasgupta's *Bibliography of Writings on and by S.R. Ranganathan*. A comprehensive bibliography, *Indian Library Literature*, by R.G. Prasher had about 4,000 references, covering the period from 1955 to 1970. Prasher's work was continued by Sewa Singh and his associates, bringing it upto 1989 in three separate successive volumes. The LIS books are listed in the *Indian National Bibliography; Indian*

Books in Print; and *BEPI* (D.K. Trust). Current LIS books are also listed in the *IASLIC Newsletter*, the *IATLIS Communication* and *ILA Newsletter*. As regards the periodical literature, a number of Indian LIS journals are covered by *Library Literature* (H.W. Wilson); *LISA* (Library Assoc., London) and *Information Science Abstracts* (USA). Since 1967 the *Indian Library Science Abstracts* has been reporting LIS current literature. AIU brings out bibliographies of doctoral dissertations; and reports new ones in their *University News*. A bibliography of Ph.D., M.Phil, and MLIS dissertations: *Research in Library and Information Science in India* brings the information on the subject upto 1985. Indian LIS standards are reported in the *Handbook of BIS* and its *Monthly Additions*.

Some gaps notwithstanding, Indian LIS literature was well-documented in 1992 when the *Libraries, Archives & Information Technology: An Annotated Bibliography, 1970-1990* as volumes 11 and 12 of the *Handbook of Libraries, Archives and Information Centres in India* was brought out.

The Bibliography under review consists of 5,892 references spread in two volumes – V.11 containing 2,957 and V.12 having 2,935 references. The compiler claims that the Bibliography covers : (1) Literature originated and published in India; (2) Literature published by Indians in foreign countries; (3) Literature published by foreign professionals

on India; and (4) Literature of general interest on South Asia and developing countries.

The total literature in the Bibliography has been categorised into 34 sub-divisions: Acquisition & book selection; Archives; Bibliographical control; Biography of librarians; Cataloguing; Circulation system; Classification; Collection development; Document delivery and universal availability of publications; Exchange of publications; Information and reference sources; Information seeking behaviour, needs and requirements; Inter-library loan; Librarianship; Librarianship as a profession; Library and information management; Library and information science education & training; Library buildings, furniture and equipment; Library literature; Library legislation; Maintenance & storage; Mutilation, losses and weeding of materials; Periodicals management; Professional associations; Reference and information services; Resource sharing; Scientometrics/Bibliometrics; Staff; Standardization of library & information activities; Stock verification; Translation; Types of libraries; User education; and User studies & surveys. The categorisation into 34 broad sub-divisions follows an alphabetical order.

There are four indexes – Author Index, Publisher Index, Subject Corporate Index, and Subject Index – given at the end of each volume to facilitate the use of Bibliography. In addition, V. 11 has three Appendices; (1) List of publishers, distributors and exporters; (2) List of Library & Information Science serials; and (3) List of books and reports published during 1980-90. V.12 has also an Appendix which gives the list of books and reports published during 1980-91. There are 32 preliminary pages (vii to xxviii) which are common to and are available in both the volumes of the Bib-

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liography. They contain Preface, Introduction, List of abbreviations, Abbreviations of periodicals indexed, and the List of journals indexed. It is also informed that some left out areas, such as Information policy, Systems, Programmes, Networks, Publishing, Printing and micrographics, etc. will be covered in yet another volume (V.13) to complete the coverage of this Bibliography.

The first break-down of the universe of LIS literature on page vii in V.11 and on page v in V.12 in the Bibliography shows that the documents on the same subject instead of being available at one place, are scattered throughout the text. Whereas the Acquisition & Book Selection occupies the first place, the Collection Development is at the 8th place. It is when both of these are related subject. Cataloguing is followed by Classification and in between these two related subjects comes Circulation System. Then Circulation System is separated from Document Delivery and UAP by Classification and Collection Development. Librarianship, the subject of the Bibliography occupies the 14th position instead of the 1st. Similarly, in V.12 Staff occupies the 12th position and LIS Education is placed at the first; and these two related subjects are separated by 10 other unlike subjects. The first break-down of the universe of LIS appears to us neither logical nor helpful. The order followed by well-established schemes of classification has been ignored.

Same is the case with the further sub-division. In V.12 at p.72 the like documents have been placed at serial nos. 535, 539 and 542. Since they all represent Indian library literature from 1955 to 1985, they should have been placed together and not separated by unlike subjects. Moreover, the *Indian Library Literature*, 1971-80 (542) should have preceded the *Indian Library Literature*, 1981-85 (539) and not succeeded it as is in the Bibliog-

raphy under review. In the organisation of literature on Cataloguing, instead of taking subject as the basis, the ordering has been based on such aspects as Textbooks, General, Language Literature, Types of Publications, etc. Against it, the organisation of literature on Cataloguing in Sewa Singh's *Bibliography* is as follows: Descriptive cataloguing, Cataloguing codes and rules, Subject cataloguing, Cataloguing of special materials, Cooperative cataloguing. Various cataloguing problems, including the rendering of Indic and foreign names, have been placed under the Cataloguing rules. This arrangement appears to us as more logical. Similar is the case with Classification. Instead of dividing the universe of Classification into Bibliography, Textbooks, History, Classification System and Thesaurus, etc. a more rational break-down adopted by Sewa Singh in his *Bibliography* should have been followed. The placement of various documents under different subject headings is also not correct in all cases. Whereas Pal's *Herald of Library Science : Trend report* (No.534 in V.12) has been placed under Library Literature, this reviewer's *Trends in the Growth of LIS Literature* (No. 1445 in V.12) has been placed under Scientometrics/Bibliometrics. Only the compiler can justify it. The reviewer as the author would have placed it under Library Literature. This reviewer's another paper: *Maximization of output by Library Staff* (No. 2915 in V.11) should have been placed under the subject heading Staff as it deals with staff relations. Alternatively, if Library and Information Management were to include the literature on Personnel Management also, there was no need to have Staff as a separate subject heading in this Bibliography.

Three volumes of Sewa Singh's *Bibliography*, covering the period from 1970 to 1989, and also restricting its scope to Indian LIS literature have over 6,000 references. The Bibliography under review does not go

beyond 5,892 references. There are number of cases when the same entry appears in the text more than once under different subject headings. For instance, in V.11 the entries at nos.1300 and 1929 as also at nos. 1484 and 1667 are of the same document. Similarly, the entries at nos. 1723 and 1724 refer to the same document. The actual total number of the documents indexed thus may be less than 5,892. The extended coverage of the Bibliography should have yielded more references than those in Sewa Singh's *Bibliography*.

If the references documented by Sewa Singh under class no.020.92 in his all the three volumes of the *Indian Library Literature* are compared with what the Bibliography under review has given in V.11 in chapter 4: Biography of Librarians, the things will be revealing. About 90 percent of the references are the same as given by Sewa Singh. Among the additional 10 percent quite a few are for such persons as scientists printers, publishers, etc. Sewa Singh could not include them in his *Bibliography* as they were not the librarians. The reviewer wishes that duplication in other areas is not to this extent.

A bibliographical tool worth its name should be comprehensive. The trend today is : More exhaustive, lesser in extension. A cursory perusal of the Bibliography would reveal that it is not. A number of national seminars jointly sponsored by UGC, ICAR, DRDO and many others on various facets of LIS have been ignored. These have neither been included under the seminar nor under the individual authors of various papers. Where a few papers of such seminars have been included, the policy of pick and choose has been resorted to. For instance, there is no entry for the ICAR-PAU Seminar on Agricultural Librarianship and Documentation, 2-5 Feb, 1977, *Papers and Proceedings*, Ludhiana, PAU, 1977 though out of the total of 29 papers included in it, seven have been in-

dexed in V.12 of the Bibliography under entry nos. 1109, 1127, 1136, 1152, 1173, 1177 and 1179. Moreover, these *Papers and Proceeding* were published by the Punjab Agricultural University and not by the Indian Council of Agricultural Research as has wrongly been shown in V.12 on p.395. This Bibliography has also not included a wealth of unpublished literature in the form of dissertations and theses. Neither it contains most of the reports and occasional papers. Even a large number of commercially published documents have been left out. For instance, the following publications are nowhere available : (1) Aggarwal, D.S. *Lecture on Universe of Knowledge*. Delhi, Academic Publications, 1985, 166p.; (2) Kumar, R.P. *Research Periodicals in Colonial India, 1780-1947*. Delhi, Academic Publications, 1985, 233p.; (3) Prasher, R.G. *Cumulative Index to Indian Journal of Genetics and Plant Breeding*. Delhi, Researchco Reprints, 1981, 349p.; (4) Prasher, R.G. *Index and Indexing Systems*. New Delhi, Medallion Press, 1989, 206p.; and (5) Rajan Pillai, C.V. *Universe of Knowledge*, Trivandrum, Velicham Publications, 1983, 64p. A careful examination of the Bibliography may yield a long list of omissions.

A word about technical aspect. The Bibliography renders Sewa Singh as Singh, Sewa and Rajwant Singh, as Singh, Rajwant. The same practice has been adopted for all the Sikh names in spite of the fact that among Sikhs, Singh is a part of the personal name and not a surname. The rendering of Ranjit Singh Rana as Rana, Ranjit Singh (V.12 entry no.1600) is all right, but entering Joginder Singh, Kuldeep Singh, Rajwant Singh or Sewa Singh under Singh is not correct. They are to be rendered as these are.

In the text and indexes the author's names have been spelled wrongly in many cases. This reviewer has consistently written under the name Ram Gopal Prasher or R. G. Prasher.

The Author Index in V.11 at p.370 shows him as Prasher, Ram Gopal; and that in V.12 at p.387 as a Prashar, R.G. The Bibliography has taken a liberty to spell Prasher as Prashar; use full form of the name in one, and the abbreviated form in the other in the Author Index of the same Bibliography. Further, in V.12 entry no. 1445 the surname has been spelled correctly as Prasher, but access to this reference has been provided through surname Prashar in the Author Index. Such errors and inconsistencies can be found for other authors too. For example, in the Author Index of V.11 it is Sharma, Jagdish Saran, but in the Author Index of V.12 the same name has been rendered as Sharma, J.S. Another author R.D. Kwatra has been made R.D. Kawatra and Rama Tirth has been changed into Ram Tirth (v.12 p.353). There is mixing up of authors also. For instance, there are more than one Mohinder Singh. Two of them this reviewer knows are : (1) The Librarian of IIT, New Delhi, and (2) The Senior Scientist of DRDO, now at Pune. Reference no. 2944 in V.11 is certainly authored by the latter, though it has been wrongly entered in the Author Index under the former.

In both the volumes on p.xxvi it is claimed that 80 percent of the reference carry 'informative abstracts'. To verify the truth of this statement we actually counted the annotated references in V.11. Only 274 out of 1000 references are annotated. This gives us the percentage of 27.4 against the 80 percent claimed. The actual percentage may be more but much less than 80 percent.

In the main part, the citations may follow any order – logical or illogical – but if efficient indexes are provided the retrieval of the desired entry will not be difficult. Unfortunately the indexes provided to facilitate the use of the main part of the Bibliography are not free from faults. At places the alphabetisation in the indexes is not correct. For instance, in V.11 p.428 the order is

Universal, Universities, Universal, Universe and Universal. The correct order should have been Universal, Universe and Universities. In some cases even the location symbols are missing. In the Author Index V. 11 at p. 359, there is no location number for Augustine, C.A.; Augustine, V.M.; and Aulakh, G.S. For want of location symbols, access to the documents by these authors through the Author Index is not possible.

In the Author Index in V. 11, entry nos. 1249 and 1975 refer to Tejomurty. In the main part these very documents are authored by Parameswaran and Awk respectively. On the other hand, though entry no. 1248 is authored by Tejomurty, the Author Index does not indicate it. Again, the Author Index of V. 11 at p.367 reveals that entry no.1353 is by Kumar, R.P. In the text this entry is authored by Krishna Kumar. In the Author Index this very entry has also been attributed to Krishan Kumar. In case there is any document by R.P. Kumar in V. 11, it is lost because the Author Index is of no help. The compiler is extra kind to Krishan Kumar and puts his name twice in the Author Index. Reference nos. 786, 1020, 1108, 1109, 1111, 1140, 1214, 1257 are given against Krishan Kumar. These very references and some more are again mentioned against Krishan Kumar. In this very volume entry no. 1333 is shown in the name of M.P. Satija in the Author Index. In the text the entry is for Neelamaghan. The entry no.1334 belongs to the M.P. Satija though not shown as such in the Author Index. In V. 12 in the Author Index the entry no. 418 is shown under Sharma, Ravindra Nath but in the main part this very document is authored by Shailendra Kumar. The entries no. 555 and 556 show the author as Satija, M. instead of Satija, M.P. The entry no. 2225 has been shown in the Author Index of V. 12 as authored by Chotey Lal, but in the text at page 287 this very document has been authored by Bavakutty. Any document by Chotey Lal is

nowhere available on the whole page. Perhaps the Bibliography has mis-spelled Chhotey Lal as Chotey Lal. V. 12 may have some entries by Chotey Lal or Chhotey Lal, but because of the faulty indexing, the Author Index provides no help in retrieving the same.

There are a number of small errors, inconsistencies, and spelling mistakes. In V. 11 p. 372 the serial nos. of entries against Satija, M.P. should be 1836-44 instead of 1836, 1837, 1838-1844. At p.185 in V. 11 the entry no. 1665 has been wrongly numbered as 1675. Bachelor has been spelled as Bachlor in V. 12 on page 412. In entry no. 1136 on p.143 of V. 12, the alphabetical order is faulty. Kawatra (if he is not be spelled correctly as Kwatra) should be followed by Kulkarni instead of preceding it. Entry no.243 on page 461 on V. 12 should read as Indian Library and Information Science Literature.... and not as Indian Librarian...

Appendix 3 in V. 11 and Appendix 1 in V. 12 give a list a books and reports published in 1980-90 and 1980-91 respectively. Difference of coverage in the two notwithstanding, the serial no of references in both the Appendices is a continuous one. The alphabetical list of the publishers finishes with S. No. 231 and letter I (Inter-India) in V. 11. The first S. No. of this list in the Appendix 1 in V. 12 is 232, but the first entry starts not with letter 'I' but with letter 'A' (Aditya Prakashan). In fact some publishers like Aditya, Ashish, Batra, Ess Ess and others have been repeated to include their publications of 1991. However, there are publishers whose 1991 publications have been omitted. For instance, *Managing the University Libraries*, 1991 of Today & Tomorrows, New Delhi has not been included. Anyway, there may be some logic to repeat Aditya, Ashish, Batra, and Ess Ess with a view to reporting their 1991 publications. There is, however, no

justification whatsoever for including B.R. Pub., DoE, IASLIC, INSDOC and Informatics Pub. in the Appendix 1 of V. 12. All these publishers should have been included in the Appendix 3 of V. 11 in their correct alphabetical order. Even the alphabetical order of the publisher is faulty. For instance, Aditya Prakashan instead of being put after the Academic Publications on p.443 of V. 11, has been wrongly placed in between the Ashish Publishing House and the Asiatic Book Agency on page 445. In short, there is no dearth of errors, inconsistencies, and omissions. On positive side, the

Bibliography is impressive size-wise and good as regards its getup.

Any effort towards the bibliographical control of LIS and related literature is welcome. So is the *Libraries, Archives & Information Technology: an Annotated Bibliography*. Since accuracy is the soul of any bibliographical tool it is hoped that the next edition will be free from all the mistakes, error and inconsistencies, and the literature in it will be organised more systematically. The effort should be in closing the gaps and making this Bibliography more comprehensive rather than extending its scope.

INDIAN COUNCIL OF MEDICAL RESEARCH

INTERNATIONAL RESEARCH FELLOWSHIP OF NATIONAL INSTITUTES OF HEALTH (U.S.A.)

The Indian Council of Medical Research on behalf of the Ministry of Health & Family Welfare, Government of India has been authorised to process applications for the International Research Fellowship of the Fogarty International Center, National Institutes of Health, U.S.A.

Applications (on prescribed form) are now invited from candidates for award of International Research Fellowships of the National Institutes of Health, U.S.A. for specialised training in that country starting late 1994. The fellowship can be offered for one or two years.

ELIGIBILITY REQUIREMENTS

To be eligible for an International Fellowship, an applicant must :

1. hold an earned doctoral degree (Ph.D., M.D., D.O., D.D.S., D.V.M., O.D., D.P.M., Sc.D., Eng.D., Dr. P.H., or D.N.S.) or the equivalent in a health science field at the time of submission of an application to the Nominating Committee;
2. have earned the doctoral degree with 10 years of the application receipt date (should have received their doctrol degree on August 1, 1983 or thereafter);
3. have demonstrated the ability to engage in independent basic or clinical research;
4. submit a research proposal in an area of one of the biomedical or behavioural sciences;
5. have a sponsor in the United States at a nonprofit institution who has agreed to accept the applicant for research bn the applicant's proposed project;
6. have assurance from a nonprofit institution in the home country that there is a position to which the applicant can return after completion of the fellowship;
7. be proficient in spoken and written English;
8. should not have been in the United States on J-1 visa for more than two months if they apply for a two-year fellowship or for more than 14 months if they apply for a one year fellowship;
9. not be a U.S. citizen or a U.S. permanent resident.

Application forms and details of the fellowship can be obtained before 31st March, 1993 from the Director General, Indian Council of Medical Research, (N.I.H. Fellowship), Ansari Nagar, Post Box No. 4508, New Delhi-110 029. The last date for receipt of completed application form by ICMR is 15th April, 1993. Application forms received after the closing date will not be considered.

THESES OF THE MONTH

A list of Doctoral Theses accepted by Indian Universities

BIOLOGICAL SCIENCES

Anthropology

1. D'Souza Hector, P. **Aggression, a strategy for survival: A macro to micro level study of Nagas of North East India with a special reference to Angami Nagas.** Delhi.
2. Parminder Singh. **Biochemical variation among people of Garhwal Himalayas.** Punjabi. Prof I J S Bansal, Department of Human Biology, Punjabi University, Patiala and Dr S M S Chahal, Lecturer, Department of Human Biology, Punjabi University, Patiala.
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**SARDAR VALLABHBHAI REGIONAL
COLLEGE OF ENGINEERING AND
TECHNOLOGY, SURAT-395007**

RECRUITMENT - EXTENSION OF LAST DATE

In continuation of our earlier advertisement for recruitment of various teaching, non-teaching and technical personnels at this college, the last date for issuing and submission of application form is hereby extended upto 18-1-1993 for all the posts.

PRINCIPAL

St. Teresa's College Ernakulam

WANTED

- Lady Lecturer in (1) Home Science (Nutrition)/Home Management
(2) Hindi
(3) Commerce
(4) Chemistry

(All open quota and leave vacancy) for St. Teresa's College, Ernakulam, Kerala. Those who satisfy Government and U.G.C. regulations may apply within one month to the Principal. Application forms can be had from the Principal on payment of Rs. 50/- in person or Rs. 60/- by D.D. or M.O.

UTKAL UNIVERSITY

**CORRIGENDUM TO ADVERTISEMENT
NO. ESTT.I/1041-C/VOL VI/16982/92
DATED 2.12.1992.**

The following be added under the headline

"Desirable Qualification (For M.C.A)" occurring at Page-2.

"Reader in Anthropology - With specialisation in Social Anthropology."

REGISTRAR

AGRICULTURAL SCIENTISTS RECRUITMENT BOARD KRISHI ANUSANDHAN BHAWAN, PUSA, NEW DELHI

AGRICULTURAL RESEARCH SERVICE EXAMINATION/NATIONAL ELIGIBILITY TEST -1992

The Agricultural Scientists Recruitment Board (ASRB) will hold a Combined Competitive Examination for Agricultural Research Service (ARS)/National Eligibility Test (NET) sometime in the last week of June, 1993 for filling up 332 vacancies in various disciplines in the Scientists Grade in the pay scale of Rs. 2200-75-2800-EB-100-4000 and Lecturer/Assistant Professor in the State Agricultural Universities respectively. For complete details, including application format, please refer to "Employment News" issue dated the 26th December, 1992. The last date for receipt of completed applications in the office of ASRB is 8.2.93.

**Capt. R.K. Marwaha
SECRETARY**

davp 1020(7)92

THE MAHARAJA SAYAJIRAO UNIVERSITY OF BARODA

Notification No. ADE/7 Of 1992-93

Applications are invited for the following posts in the University & its institutions in prescribed forms. This form alongwith other details like requirements of qualification, etc. can be obtained from the University Office from 1-1-93 to 1-2-93 on any working days by sending a request to the Registrar, M. S. University of Baroda, Vadodara - 390 002 alongwith a self-addressed envelope of size 30 cms x 12 cms. accompanied with a Demand Draft drawn in favour of the Registrar, M. S. University of Baroda of Rs.50/- (Rs.15/- for members of Scheduled Caste and Scheduled Tribe) for the posts in the Grades with a maximum of Rs.4,000/- and above, and Rs.25/- (Rs.10/- for Scheduled Caste & Scheduled Tribe) for the posts in the Grades with a maximum of Rs.3,999.00 and below or by making payment in Cash to ADE Section of the University Office for the same during working days only between 11.00 a.m. and 2.00 p.m. No amount will be accepted either by M.O. or by Postal Order except in cases of SC/ST where they can send Postal Order of Rs.15/- or Rs.10/- as the case may be for the concerned post or pay the amount in Cash as stated above. The SC/ST applicants will furnish a copy of the Certificate to the effect at the time of requesting for application form. The SC/ST candidates coming from outside Gujarat State, shall also have to produce a Certificate from the competent authority of the Gujarat State mentioning that the Gujarat State has recognized them as SC/ST for the purpose. (The amount of Rs.50/- and Rs.15/- as well as Rs.25/- and Rs.10/- respectively includes the cost of application form and the application fee).

The application form duly completed in all respect alongwith necessary enclosures should reach the Registrar, M. S. University of Baroda, Vadodara-390 002 on or before 15.2.93.

Sl.No.	Name of the Post	No. of Post (s)
1	2	3

A. TEACHING POSTS

I. Faculty of Home Science

1. Professor of Home Science

- | | |
|-------------------------|---|
| Education and Extension | 1 |
|-------------------------|---|
- ### II. Faculty of Fine Arts
- | | |
|--|---|
| * 2. Professor of Applied Arts | 1 |
| * 3. Professor of Sculpture | 1 |
| 4. Reader in Painting | 1 |
| 5. Reader in Applied Arts | 1 |
| 6. Lecturer in Applied Arts | 2 |
| 7. Lecturer in Arts History & Aesthetics | 1 |
| 8. Lecturer in Painting | 1 |

B. NON-TEACHING POSTS

III. University office & its Faculties/ Institutions

- | | |
|------------------------------------|---|
| 9. University Librarian | 1 |
| 10. Deputy Registrar | 3 |
| 11. Assistant Registrar | 1 |
| 12. Documentation Officer | 1 |
| 13. Workshop Forman | 1 |
| 14. Computer Programmer | 1 |
| 15. Training and Placement Officer | 1 |

Posts at Sr No.2 and 3 were notified under Notification No.8/90-91 Can-

didates who have applied earlier need not apply. However, if they want to update their Bio-data they can send it on plain paper.

Grades for the posts at Sr.No.

4500-7300 : 1,2,3,9

3700-5700 : 4,5

3000-4500 : 9,10

2200-4000 : 6,7,8,11,12,13,14,15

Reservation:-

Each one of these posts are reserved for the categories mentioned against the particular categories. Where more than one posts are available other candidates can also apply.

ST:- 6,10,12,14,15

VADODARA
Dtd.18.12.1992

D.P. Chhaya
REGISTRAR

SHIVAJI UNIVERSITY, KOLHAPUR

Advertisement

Applications are invited for the post of JRF (One) to work in the Department of Science and Technology, sponsored project entitled "Novel Biopolymers Containing Mesogenic Side Groups" for 3 years.

Candidates with M.Sc in Chemistry (Polymer or Synthetic Organic) having good academic record will be considered for appointment as JRF on a fixed pay of Rs. 1800/- P.M. + H.R.A.

Application on plain paper stating full name, date of birth, qualifications, experience, present employment, etc. should reach Dr. S. V. Lonikar, Department of Chemistry, Shivaji University Postgraduate Teaching Centre, Solapur-3 within two weeks from the date of this circular.

Date - 29-12-1992

Place : Kolhapur

Dr. B.P. Sable
REGISTRAR

**MASS COMMUNICATION RESEARCH CENTRE
JAMIA MILLIA ISLAMIA
NEW DELHI**

ADMISSION NOTICE NO. XI/1993

Applications are invited for a two-year M.A. course in Mass Communication which comprises Radio, Television, Film and Audio-Visual Production. Candidates, who have taken their first degree in Arts, Humanities, Social Sciences, Natural Sciences, Engineering, Medicine or Business Management are eligible to apply provided they have secured fifty percent marks in their first degree examination. Candidates should not be more than 30 years of age as on 1.7.1993. Candidates will be shortlisted for written test on definite evidence of their familiarity or involvement in one or more of the following fields :

Still Photography, Cinema, Radio, Television, Graphic Art Design, Theatre Acting or Production, Vocal or Instrumental Music, Journalism in Print or Broadcast Media, Creative Writing, Communication Experience in Natural or Social Sciences or Technology, Social and ameliorative movements.

Candidates shortlisted on the basis of this evidence will be called for written tests. On the basis of these tests, they will be further shortlisted for interview by the Admission Committee.

Application Forms alongwith the Prospectus can be had from the undersigned either personally from 10.00 A.M. to 1.00 P.M. on any working day or by sending a self-addressed and stamped envelope. Application should be accompanied by documentary evidence of aptitude in fields listed above.

Application for obtaining the admission form should be accompanied with crossed Bank Draft for Rs. 90/- (inclusive of the cost of Prospectus) in favour of Administrative Officer, M.C.R.C. This amount shall not be refundable. The draft should be payable at Delhi or New Delhi and should bear a validity date of six months.

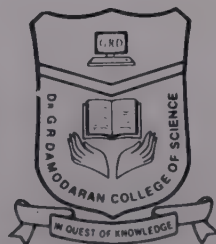
Form will be available w.e.f. 8.1.93. Candidates whose results have not been declared till the date of applying can apply in anticipation of their results.

The last date for receipt of application forms will be **Monday, 8th February 1993 upto 5.00 P.M.**

M.B. Mughal

Administrative Officer

Dated : 29.12.1992



MBA ADMISSION NOTICE

Dr. G. R. DAMODARAN COLLEGE OF SCIENCE

**Civil Aerodrome Post
Avanashi Road, Coimbatore-641 014
Phone : 572719**

MBA PROGRAMME

**(Approved by the All India Council for Technical Education and
affiliated to the Bharathiar University)**

ADMISSION TO THE MBA PROGRAMME :

Applications are invited for admission to the full-time MBA Programme of the Bharathiar University for the academic year 1993-94, being offered at the College.

ELIGIBILITY :

Candidates should possess a degree of the Bharathiar University (under the 10 + 2 scheme of examination) or of any other University recognised as equivalent thereto and having passed in First or Second Class.

ADMISSION PROCEDURE :

An entrance examination for all the eligible candidates will be conducted on Sunday, the 28th February, 1993. Candidates shortlisted on the basis of their performance in the test will be invited for a Group Discussion and Personal Interview on a later date.

Candidates who will be appearing for the Final Degree Examination in April/May 1993 can also apply.

Application forms can be had from the Principal, Dr. G.R. Damodaran College of Science, Civil Aerodrome Post, Avanashi Road, Coimbatore-641 014 on payment of Rs. 150/- (not refundable) in person or through a crossed Postal Order/Demand Draft drawn in favour of Dr. G.R. Damodaran College of Science payable at Coimbatore. A self addressed envelope of 25 x 12 cms. size with a postage stamp affixed for Rs. 2.00 should be sent along with application. Candidates in and around Coimbatore may get the application in person on payment of Cash.

Filled-in application forms should be sent to the Principal, Dr. G.R. Damodaran College of Science, Civil Aerodrome Post, Coimbatore-641 014 on or before **Thursday, the 18th February, 1993.**

PRINCIPAL

SHIVAJI UNIVERSITY, KOLHAPUR

Applications are invited for the following posts in CSIR-Research Scheme entitled "Variability of the Radio Sun during the current phase of high solar activity". The duration of the project is upto February 1994 but is likely to be continued.

Qualification : JRF :

M.Sc. in Physics/Electronics or B.E./B.Tech. (Electronics). Candidates with NET/GATE examination will be preferred.

Age limit : 28 Years

Stipend : Rs. 1800/- + HRA

Qualification : SRF :

As in JRF and in addition two years of Research experience.

Age Limit : 32 Years

Stipend : Rs. 2100/- + HRA

Qualification : RA :

Ph.D. in Physics/Electronics.

Emoluments :

Rs. 2200-100-2700 + HRA or as in JRF and three years experience of research, design and development in Engineering and Technology.

Age limit : 35 years

Number of Posts to be appointed are TWO (JRF/SRF/RA)

The selected candidate will be expected to design and develop mechanical and electronic engineering systems of Microwave radiometer for solar flux measurement.

Application on plain paper stating particulars regarding date of birth, qualification and experience should be sent to

Prof. R.V. Bhonsale

CSIR Emeritus Scientist

Department of Physics,

Shivaji University,

Kolhapur -416 004

within 10 days of the date of publication of this advertisement.

KOLHAPUR

Date : 29/12/1992

Dr. B.P. Sabale

REGISTRAR

PHYSICAL RESEARCH LABORATORY

AHMEDABAD-380 009

The Physical Research Laboratory makes four awards called "Shri Hari Om Ashram Prerit Dr. Vikram Sarabhai Research Awards", every two years from funds kindly provided by Pujya Shri Mota of Hari Om Ashram of Nadiad. These awards will be made to Indian Scientists, who are below 45 years of age, on 1st January 1993, for original work in the following fields :

- (1) Space Sciences (including Astronomy, Astrophysics, Planetary and Atmospheric Sciences).
- (2) Space Applications (in the areas of Meteorology, Hydrology, Remote Sensing and related ground truths).
- (3) Electronics, Informatics, Telematics and Automation.
- (4) Systems Analysis or Management including non-linear, non-equilibrium systems in natural and social sciences and technology.

Although the overall work of the candidate would be taken into account, the work done in India would be given prime consideration.

The candidate should have to his credit at least one or more of the following achievements :

- (1) Significant achievement in scientific research.
- (2) Important and successful adaptation of new technology.
- (3) Planning, development and implementation of systems in the context of science and technology.

The selections for the year 1993 will be completed by February 1994 and the awards presented on 12 August 1994.

The last date for receiving nominations is **September 15, 1993**. Sponsors are requested to send a two page note (6 copies) summarising the contributions and achievements of the sponsored candidate together with his/her biodata (6 copies) in a cover marked 'confidential', addressed to the Director, Physical Research Laboratory, Navrangpura, Ahmedabad 380 009.

More detailed information will be asked for by the Selection Committee, if considered necessary.

University News

MONDAY, JANUARY 18, 1993

Rs. 5.00

SNDT Varsity Convocation



Dr. (Mrs) Suma Chitnis, Vice-Chancellor, SNDT Women's University, speaking at the convocation of the university. Seated on her left are Mr. Nani A. Palkhiwala, an eminent jurist, who delivered the convocation address, Smt. Sharda Divan, former Vice-Chancellor and Dr. Suresh Dalal.

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Deputy Secretary (Publications)

Association of Indian Universities

AIU House, 16 Kotla Marg, New Delhi - 110 002

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Telex : 31-66180 AIU IN

GRAM : ASINDU

UNIVERSITY NEWS

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Association of Indian Universities

IN THIS ISSUE

Management of Universities Towards a New Education Policy and Response of UGC	4 12
Mobilization for Literacy	14
Convocation SNDT Women's University, Bombay	17
Campus News IUCCA Facilities Dedicated to Scientists Braille Geometry Kit New Courses in SV Varsity	20 21 21
Agriculture PAU to Publish Books on Agro-Industries	22
News from UGC Countrywide Classroom Programme	22
News from Abroad M.A. in Contemporary International Studies 6th International Metrology Congress	23 23
Book Review	24
Research in Progress	28
Theses of the Month	30
Education News Index	33
Classified Advertisements	35

Opinions expressed in the articles
are those of the contributors and do
not necessarily reflect the policies of
the Association.

Editor :
SUTINDER SINGH

Educational Administrators

Facing the Challenges of the Future

U. S. Chaudhari*

Shobha Vaidya**

So long as a society is relatively stable and unchanging, the problems it presents to men tend to be routine and predictable. Organizations and institutions in such an environment can be relatively permanent. But when change is accelerated, more and more novel first-time problems arise, traditional forms of organization prove inadequate to the new conditions. They can no longer cope. In this situation, we need to create "self destroying organizations." Traditional functional organization structures, created to meet predictable non-novel conditions prove incapable of responding effectively to radical changes taking place in the environment.

Self Renewal

When, John Gardner became secretary of Health, Education and Welfare in U.S.A., in 1965 a top to bottom reorganization shook the department. In his small book *Self-Renewal*, long before he entered the government, Gardner observed that "the far sighted administrator.....reorganizes to break down calcified organizational lines. He shifts personnel..... He redefines jobs to break them out of rigid categories". Elsewhere Gardner referred to the "Crises of Organization" in government and suggested that, in both the public and private sectors, "most organizations have a structure that was designed to solve problems that no longer exist." The "self-renewing" organizations, he defined as are that constantly change in structure in response to changing needs. Organizational change or "self-renewal" as Gardner (1963) puts it, is a necessary, an unavoidable response to the acceleration of change.

"A developing society" observes Pascale and Athos (1982) "requires departure, change and novelty in language, in concepts and in ways of doing things. There has to be creative movement, at least at fairly frequent intervals." A society in a changing environment is doomed if it does not produce managerial/administrative innovations which break inherited mould of perception, old pattern of behaviour and prior expression of beliefs and values.

The traditional bureaucratic design of organizations/institutions has produced spineless, faceless "organization man". As a result of change, novelty and transience, bureaucracy would take the shape of "ad-hocracy" and "organization man" will become "associative man", having close, though temporary, relationships with the fellow workers and associates. The very temporariness with the organization frees him from many of the bonds that constricted his predecessor. Transience, as Toffler (1970) says, is liberating.

"Ad-hocracy" would demand a different constellation of human characteristics. In place of permanence, transience and high mobility between organizations require never ending reorganizations within them, and a constant generation and decay of temporary work groupings. In such a situation the man periodically examines his own attitude towards the organization and gauges its attitude towards him. If he does not like what he sees, he tries to change. If he cannot change it, he moves.

* Professor and Head, School of Advanced Liberal Studies,

** Reader, Institute of Education, Devi Ahilya Vishwavidyalaya, Indore.

What John Gardner opined "the loyalty of the professional man is to his profession and not to organization that may house him at any given moment." The introduction of Ad-hocracy would increase the adaptability of organization; but it strains the adaptability of men. Frequent adaptations are made at the cost of personal satisfaction and adjustment. Ad-hocracy means a sharp acceleration in the turn-over of organizational relationships in life. The increased turn-over of all these relationships place a 'heavy adaptive burden' on individuals reared and educated for life in 'slower-paced social system' of developing countries.

Paradigm Shifting

Transition is taking place from, namely, "more of the same" and "better than before" to "different than before" stage. To deliver the goods, in the organizations and institutions, the third stage requires "frame breakers" or "paradigm shifters".

A paradigm shifter is someone who throws out the rules of the game and introduces radical, not incremental change – a leader who foments revolution, not evolution. Noel Tichy, the University of Michigan business professor, says that "incrementally fixing the old broken bureaucracy just is not doing the job these days. What is required are quantum ideas for products and services, as well as revolutionary changes in the organization to produce them". General Electric Chief Executive Officer and ultimate paradigm shifter Jack Welch adds: "It is not just quantum ideas, but the guts to stick with them."

Paradigm shifting has become a management fad in the United States. As Tichy points out : this is not just some cute little gimmick. It is difficult, it is painful, and it involves a fundamental shift in a corporation, including power. Consequently, the ugly truth is that real paradigm shifting rarely occurs within traditional Corporation or organization. And when it does, individual paradigm shifters – usually tenacious, highly opinionated action-oriented types whose speciality is, after all, rocking the corporate boat – often don't survive the process.

John Trani, the 46-year old Welch lieutenant who over-hauled and run GE Medical Systems says that "Growth, the way we did it is not easy. Change is never easy when you do it on multiple fronts. But the organization that adapts itself consciously will win, and for that you have to have leaders and managers who love change." Paradigms do not shift by thinking about them. At best, "the plan is 20 percent of the game and execution is 80 per cent of it." Pick the right people, allocate the resources, build the organization's competency and share the information and decision load – are some of the imperatives of paradigm shifting (Toffler, 1991).

For a real paradigm shift to occur within an institution or organization, "there has to be divine discontent with the status-quo at the very top, and the courage to

do something about it", says Rām Charan, a consultant to many *Fortune* 500 corporations and a former Harvard business school faculty member. At the same time, Charan cautions executives to stop looking to academic management fads for solutions. Instead, he insists that give the customers what they want and need. Get the quality that is required. Achieving continuous improvement in productivity and making decisions and executing them is the real name of the game (Huey, 1991).

Bridging Spiritual and Institutional Life

Western societies evolved separate institutions with separate spheres of influence. The Church emerged as custodian of man's faith and spiritual life. On the other hand, governmental and commercial institutions were given the role of providing for man's worldly existence. Western organization theory evolved to legitimize this duality as a natural state of affairs. Machiavelli in the sixteenth century was one of the first to consider administration as a function separate from moral laws. He advanced an amoral theory of governing organizations.

Later on, ascendancy given to bureaucratic institution, by Max Weber reinforced the view expressed by Machiavelli. In Weber's writings on organizations, factors like size, complexity, formalization and centralization were discussed and emphasized. In fact, those factors still remain principal dimensions along which we still think about organizational designs.

Although, Eastern societies never favoured separation of man's spiritual life from his institutional life, yet their prolonged domination by the West, and particularly by the Britishers had its impact on their institutions and organizations. Since China and Japan did not suffer the pangs of colonization by Western rulers for a longer time, these countries could maintain spiritual tradition in their institutions and organizations.

In Eastern societies spiritual, public and private matters were so integrated that their organizations tended to regard the task of control in the context of the whole of human needs, rather than as a more narrow transaction between Labour and Capital. They were generally more sophisticated than the West in utilizing social and spiritual forces for the organizational benefit, and in accepting the responsibilities to their employees that went with such broad influence. A return to this bridging of spiritual and institutional lives has become necessary to offset increasing dehumanization and valuelessness in the educational institutions and organizations.

Concern for Human Relationship

Educational administration is the process of integrating the efforts of personnel, and of utilizing appropriate material in such a way as to promote effectively the development of human quality. The new concept of administrator puts less emphasis on the administrators having specialized competence in all aspects of educational activity, and more emphasis upon

his possession of broad general professional competence coupled with highly developed skills in the areas of human relations and administrative processes. Administration must necessarily take place in an interpersonal setting. Thus the crucial factor in administration is the nature of the human relationship involved (Ramesh, 1991). The administrators' basic functions are to exercise broad judgment, provide professional leadership and exhibit discriminating insight and understanding in the utilization of personnel. It is perhaps because of the perennial concern for promoting human elements that the Education Commission (1964-66) advocated educational administration to be a "matter of faith and vision, bold and courageous leadership, and proper handling of human relationship." Cooperative rather than manipulative approach should be employed in obtaining the contribution of personnel to attain the organizational goals.

In education, administration would continue to be a "service agency" to teaching, research and extension work. One cannot be a good educational administrator unless one is a good teacher. Hence there should always be an opportunity open for an educational administrator to come back to teaching or research and for a teacher to go over to the administrative side on a tenure assignment. Educational administration and teaching must draw inspiration, support and enrichment from each other through periodic exchange or roles. Studies on "effective Schools" have also reinforced the belief that an educational administrator must be a strong instructional leader. He should promote orderly climate in the school, set high expectations from the students, put emphasis on basic skills and regularly monitor instructional progress of the learners (Bickel, 1983).

In their now famous work *The Art of Japanese Management*, Pascale and Athos (1982), while discussing the seven "S"s of management have drawn the conclusion that the western emphasis on the first three 'S's (Strategy, Structure and Systems) has produced an arid world in which nothing is alive. "An organization is often given its life", they say, through the four soft "S"s, that is, Staff, Skills, Style and Super-ordinate goals." The astounding success of many Japanese companies comes through meticulous attention to the soft "S"s, which act as a lubricant in the organization machine to keep the hard "S"s from grinding one another away. To vitalize and mobilize human energy through harmonious human relationship in the educational institutions, educational administrators must orient themselves to the demands of the four soft "S"s for meeting the challenge of change and acceleration.

Today competition poses an organizational challenge that cannot be met simply by technology or financial resources. Technological innovations and resource allocation are outcomes of human processes. Therefore, our ability to compete rests on our ability to or-

ganize human beings in such a way as to generate opportunity and results rather than impasses, stagnation, bureaucracy and wasteful friction. Hence "interpersonal relations" and "dialogue" have to be recognised as the basic requirement of educational administration to enable people to come together, to keep together and to work together.

Consideration for Autonomy and Growth of Employees

In an educational organization highly educated people work and interact. The more educated a population, the more democracy it seems to demand. A more educated group cannot be managed in the traditional, authoritarian, "don't ask me any question" fashion. In fact, asking questions and challenging assumptions are becoming part of everyone's job (Toffler, 1991).

Educational institutions are not machines like the "nuclear reactor". They are the abode of culture where spirit of inquiry, questioning and disagreement are deliberately encouraged. Here the people should disagree without being disagreeable, and value substantive conflict by keeping personal conflict to a minimum. To usher in such permissive intellectual climate an educational administrator is expected to possess democratic attitude, scientific temper and philosophic tolerance. Administrators having such attitude and temperament can make an educational institution a true "academic republic".

The human being is ordained with two opposing propensities: the urge to create, and the urge to destroy. Men also possess the tendency to shirk and dodge as well as the capacity to work hard and excel. Human beings do not like to stay simply as creatures of God. They frequently strive to be creators (Chaudhari, 1987). But, when the urge to create and excel is thwarted, urge to destroy comes in to play. Hence, it is the major responsibility of the educational administrator to create such conditions and contexts, in the educational institutions, which stimulate and inspire the teachers to perform qualitatively better and higher. They would make attempts to develop in the teacher and educational workers a "life style" which in the words of Alfred North Whitehead (1962) "hates waste, economises material and prefers good work."

The 21st century, unlike any other period in our history, will offer major challenges to our human resources capacities as we enter a period of rapid social, technological and economic change. We can expect such fluctuations and upheavals to progress at an even more accelerated rate in the next century. Keeping up with societal changes will consume much energy and require unusual resourcefulness on the part of most of Indians and inhabitants to other countries.

(Contd. on page 11)

Management of Universities – II

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Executive Council : Is it a Supreme Executive Authority ?

Originally the Syndicate was the executive committee of the Senate and performed both the administrative and academic functions. The Universities Act of 1904 accorded statutory recognition to the Syndicate with adequate representation of university teachers on it. Since the syndicate is an executive authority of the university, it is named as the Executive Council in some universities. Further innovation came in styling the Executive Council as "Board of Management". The CMU suggested that "the title of Syndicate in the university organizational structure needs to be reviewed. It may be restyled as the Board of Management".⁽¹⁾ Some authors made a distinction between "administration" and "management". For example Ordway Tead says, "Administration is the process and agency which is responsible for the determination of the aims for which an organization and its management are to strive, which establishes the broad policies under which they are to operate, and which gives general oversight to the continuing effectiveness of the total operation in reaching the objectives sought". And he goes on to say that "Management is the process and agency which directs and guides the operations of an organization in the realizing of established aims".⁽²⁾ Thus the authority of administration is above management. Whatever be the nomenclature it acts as policy making and policy executing body. The former is the administrative concept and latter is the management concept. The Andhra Pradesh Universities Act 1991 has restyled the Executive Council as the Board of Management which shall be the executive authority of the university.

The Size of Executive Council

We have various types of universities in the country such as Unitary, Federal, and Teaching and Affiliating. In the case of teaching-cum-affiliating university the size of the Executive Council should be larger than the unitary university since affiliated colleges also should be represented in the Executive Council. As such the size should be determined scientifically rather than arbitrarily. Dr. S. Radhakrishnan Commission has recommended that a membership of 25 should be the absolute maximum in the case of teaching and affiliating university. The Education Commission has recommended that the Executive Council as recommended by the

Model Act Committee should consist of 15-20 members. The CMU has recommended that the membership of the syndicate should not exceed 15.

The Andhra Pradesh Universities Act 1992 has fixed the number including ex-officio members at 19. The Karnataka State Universities Act has fixed the number including ex-officio members at 15. The Bombay University Act prescribes 21. Similar is the case with most of the universities in Maharashtra. All the above mentioned universities are teaching and affiliating universities.

Universities differ in size on the basis of number of teaching and research departments, student enrolment, number of affiliated colleges, constituent colleges, postgraduate centres, etc. It is desirable that there should be some kind of relationship between the size of a university and the size of Executive Council. At times special representation need be given in the Syndicate. For example according to A.P. Universities Act 1991 the executive officer, Tirumala Tirupathi Devasthanam, Tirupathi is an ex-officio member of the Board of Management of Sri Venkateswara University. Thus as per the size and special interests of a university, the size of Executive Council should be determined. However it should not be too big and it should be a compact body.

The Nature of Composition

Who should be the members of the Executive Council? Different committees have suggested different compositions. The Model Act Committee recommended that besides the Vice-Chancellor, Pro-Vice Chancellor, the Executive Council may have four deans of faculties (who should be full time teachers), four principals of colleges, three persons elected by the Court from amongst its members and four persons nominated by the Visitor which may include representatives of the government. There is no representative from the Academic Council. However the Model Act Committee has suggested, "It may be an advantage to have on the council two professors, other than deans, and also one or two persons nominated by the Chancellor".⁽³⁾ Thus the majority of the members are academicians and/or academic administrators.

The CMU has suggested that "The membership of the Syndicate should not exceed 15. The Government representatives/nominees on the Board of Management be limited to not more than one third of its total size. Half of the remaining membership should be from academics viz., college principals/teachers/university

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teachers and the remaining from other interests, such as industry, agriculture and trade, academics from other universities or national laboratories, etc. Not more than 1/3 of the Board members should be represented in the Senate/Court".⁽⁴⁾ According to the above composition only a few members will be from the academic community of the university and the rest from outside.

Currently in most of the universities, there are three types of members in the Executive Council i.e., ex-officio, nominated, and elected members. The State is the creator of a university and appoints its Chief Executive i.e. Vice-Chancellor. Thus the Vice-Chancellor is the first ex-officio member of the Executive Council. In some universities there is a post of Pro-Vice-Chancellor/ Rector and he is appointed differently in different universities. In the case of Andhra Pradesh Universities, the Board of Management appoints him on the recommendation of the Vice-Chancellor, whereas in Maharashtra Pro-Vice-Chancellor is appointed by the Chancellor in consultation with the Vice-Chancellor. The Pro-Vice-Chancellor/Rector shall be an ex-officio member. Some state Acts provided for a few other ex-officio members such as Director of Higher Education, Director of Technical Education, Director of Legal Studies, Director of Medical Education etc. In Andhra Pradesh Universities besides Director of Higher Education, the secretaries of Ministries of Finance and Education, are ex-officio members of the Board of Management. However it may be pointed out that approval of items in the Executive Council that are concerned with the ministries of finance and education in the presence of secretaries does not necessarily bind the ministries. In the Maharashtra universities, directors of Higher Education, Technical Education and Medical Education are ex-officio members of the Executive Council. Unlike A.P. universities there are no representatives (secretaries) from the ministries of Education and Finance.

The basic question is how does a government representative conceive his role when he is appointed/nominated by the state? If he assumes the role of a bridge between the university and the state he will play constructive role in helping the university and the state. But generally he will play the role of an agent of the state and protect the interests of the state rather than the autonomy of the Executive Authority. At certain times he paves the path for improper interference by the state. Further, the state uses him as indirect channel of communication in expressing its wishes/desires : "State Governments in India have not hesitated to inform the universities of their wishes, thus bringing substantial pressure to bear on institutions. It is also true that university authorities are particularly sensitive to the views of government officials and generally try to consider them in academic decision-making".⁽⁵⁾

In addition to ex-officio members there are nominated members in the Syndicate/Executive Council/Board of Management. The power of making nominations in some universities is vested with the government, in others it is with the Chancellor. When it is vested with the government, there is a chance of misuse of the power to political ends. On the other hand if the Chancellor has the power to nominate persons on the basis of some norms, there is less scope for political interference. The Andhra Pradesh Universities Act 1991 has empowered the state government to nominate seven persons out of which one is an academician (Professor), two are academic administrators (Principal/Dean of University College and one Principal of affiliated Colleges) and four eminent persons from the fields of industries or commerce or legal, engineering or medical professions or from such other fields of public life as the government may consider useful to the university.

The state government may misuse the power for its political ends. It may appoint politicians under the category of eminent personalities of public life. The CMU cautioned "In many universities, the authorities like Senate, Academic Council and Syndicate, are dominated by non-academic members who have a tendency to politicise the atmosphere".⁽⁶⁾ Politically powerful professor may be nominated by the government. In the case of Karnataka universities, the Chancellor nominates on the basis of certain norms but not by the government. The Act insists that the Chancellor should nominate according to seniority with regard to Deans, Principals and Professors and persons belonging to scheduled castes and socially educationally backward classes of citizens.

Finally the remaining members of the Executive Council shall be elected from the Senate and Academic Council. Even though the importance of Senate in terms of powers and duties has declined considerably in recent years, its electoral power however has not declined. As already mentioned the importance of senate as an electoral constituency in different universities is intact. In Maharashtra universities, the Senate elects eleven members and the academic council elects three members. Thus the elected representatives from the Senate and the Academic Council constitute a major group in the Executive Council. In Andhra Pradesh universities the nominated members are seven and elected numbers are seven apart from five ex-officio members. Out of seven elected members only two are elected from the Academic Senate and the rest directly from amongst different constituencies. Another issue in the composition of Executive Council is how many members should be internals and externals in the Executive Council? The Model Act Committee has suggested that the Executive Council should consist of equal number of externals and internals. In most of the universities the internal mem-

bers are in majority when compared to externals, which is in tune with cardinal principle self governance.

The Powers and Duties of Executive Authority

Every university Act defines the powers and duties/or powers and functions of the Executive Council. The Bombay University Act states that "the Executive Council shall exercise the following powers and perform the following duties",⁽⁷⁾ whereas the Orissa Universities Act states that the Syndicate shall perform the functions and exercise the powers as specified hereunder. Thus duties and functions are performed through the exercise of power. The Executive Council/Syndicate is the possessor of authority and discharges its duties as prescribed in the Act. When compared to other two important authorities i.e. Senate and Academic Council, it exercises all powers of the university not otherwise provided under the proviso of powers and duties/functions of the Executive Council/Syndicate. Under the Bombay University Act, the Executive Council shall "exercise all the powers of the University, not otherwise provided for in this Act or the Statutes and all other powers which are required to give effect to this Act, or the Statutes, Ordinances and Regulations".⁽⁸⁾

The prerogative power of the Executive Council/Syndicate is the power of making ordinances. Generally every university Act incorporates subject matters of Ordinance. Further, university Acts specify the areas of Ordinance, where it has to consult the Academic Council compulsorily. The specified areas vary from university to university. In the case of Andhra Pradesh universities on two items out of twelve, the Board of Management has to consult the Academic Senate in making ordinances – the appointment and duties of examiners and the conditions of residence of students. In Maharashtra universities, the Executive Council has to consult the Academic Council on seven items out of twelve such as admission of students for different courses of study, fees to be charged for the enrolment of students, the condition of residence, conduct and discipline of the students of the university, etc. while making ordinances. Further, in any matter connected with the maintenance of the standards of teaching and examinations within the university no ordinance shall be made by the Executive Council unless a draft thereof has been proposed by the Academic Council. The ordinance made by the Executive Council shall not require the approval of the Chancellor but it should be submitted to the Chancellor. The Ordinance shall come into effect from such date as directed by the Executive Council.

The university Acts define the scope of authority of the Executive Council/Syndicate. Generally the duties performed by the Executive Council are almost similar in almost all universities (teaching and affiliating univer-

sities). The Executive Council as the first order of the management of a university makes decisions in different areas and these areas of management are (1) Financial Management, (2) Personnel Management, (3) Academic Management, (4) Management of Departments, (5) Management of Affiliated Colleges, and (6) Management of Students. The following paragraphs narrate the management of different areas.

1. Financial Management

The major functions under financial management are to accept endowments, bequests, donations, etc. on behalf of the university; administer the property and funds of the university; invest funds belonging to the university; provide buildings and other infrastructure facilities for the conduct of the work of university; prepare annual accounts of the preceding financial year, the revised estimates for the year and the budget estimates for the ensuing year; fresh appropriations from anticipated savings or appropriated balances from any account, etc. Generally the Executive Council/ Syndicate has power to accept proposals involving expenditure for which no provision has been made in the budget or incurring expenditure in excess of the amount provided in the budget. As already mentioned the associated authorities of the Syndicate/Executive Council are Finance Committee and Accounts Committee and these two committees help the Financial Controller in preparing the budget and the annual accounts respectively.

Since the state is meeting more than 80 percent of the expenditure, it imposes controls on the university expenditure. Generally these controls are that without the prior approval of the state government, the university shall not create any new posts either in teaching/non-teaching cadres; upgrade any post or revise pay scales or grant special allowance or other extra remuneration of any description whatsoever; divert any earmarked funds; incur any expenditure on any development work, etc. University also receives funds from various agencies such as UGC, agencies of the central government; private philanthropy, etc. apart from self generating resources. Even though these amounts are meagre but help greatly for the development of universities. Adjustments are quite common from one account to another account which does not necessarily mean diversion of funds. Thus the university has to manage finance within the framework of state control mechanisms. The state bureaucracy viz., ministries of education and finance, is not responsive to the requests/clarifications made by the university. It has already been mentioned that the state should appoint "Financial Advisor" so that red tapism can be minimised/prevented. He will offer expert guidance and advice to the Vice-Chancellor in the financial management. He should not however act as a barrier or a brake to the university activities.

2. Personnel Management

The university is a labour intensive academic enterprise. It has a large number of faculty and non faculty including professionals such as the staff of laboratories, workshops, computer centre, library, health centre, press and publications, engineering personnel both for maintenance and new works, etc.

The Act generally prescribes that the Executive Council has the power to appoint teachers and non teachers subject to terms and conditions of service and discipline and duties prescribed by or under the statutes and ordinances. All appointments are to be made by the Executive Council based on the recommendations made by the selection committees constituted for the purpose of appointment of teachers and non-teaching employees. But the Executive Council has overriding power of rejecting a candidate selected by the teachers selection committee or change the order of merit arranged by the selection committee in making appointments. In the Maharashtra universities the Executive Council has power "to make an appointment otherwise than in accordance with the order of merit arranged by the selection committee, it shall record its reasons in writing and submit to the Chancellor, who may approve the proposal or return it to the Executive Council for reconsideration".⁽⁹⁾ In Andhra Pradesh universities whenever the Board of Management rejects the selection made by the selection committee, the matter will be referred to the state government. Thus the government is final authority in A.P. universities whereas the Chancellor is final authority in the case of Maharashtra universities.

For all other appointments there will be properly constituted boards of appointments. There will be a separate selection committee for the appointment of Registrar, Finance Officer, Librarian, etc. in many universities. The Board of Management (Executive Council) in Andhra Pradesh universities can appoint Rector and Registrar without selection committee and without reference to the government.

Universities' freedom to create new posts, Teaching and Non Teaching, even at the cost of self generating resources is restricted and the state government's clearance and concurrence are essential. Even for upgrading of teaching and non teaching posts, the approval of government is essential. Thus the Executive Council normally makes appointments in the vacancies that arise as a consequence of promotion (consequential vacancies), retirements/resignations/deaths, etc.

The management of faculty in the university is the most difficult and complex task. Specialisations and reservations are causing academic anarchy. The junior faculty becomes senior faculty by securing higher positions in the same department either by specialisations/

reservations. It is not uncommon for the aggrieved parties to seek justice in the courts. The CMU has suggested "Grievances must be settled early and that every university should clearly define the time limits within which responses to the grievances should be given to the concerned person(s)/groups".⁽¹⁰⁾ Thus the universities should develop an effective and credible machinery to redress the grievances of the teaching and non teaching staff. The University Education Commission had recommended the constitution of Tribunal of Arbitration consisting of a representative of the university and teachers and an umpire. As per section 74 of Bombay University Act (Similar also in all other universities of Maharashtra State) ".....a Tribunal of Arbitration consisting of one member appointed by the Executive Council, one member nominated by the Officer or Teacher concerned and umpire appointed by the Chancellor..... The decision of the Tribunal shall be final and no suit or other legal proceeding shall lie in civil court in respect of the matter decided by the Tribunal".⁽¹¹⁾ Such a machinery is essential to settle disputes without going to the courts. Currently in most of the universities the Registrar looks after personnel. Today's university requires skilled/ specialist personnel manager to steer the personnel department of a university. The university should appoint qualified person as a Director/Manager of personnel.

3. Academic Management

As mentioned earlier the Academic Council is the principal academic authority and is responsible for the maintenance of the standards of teaching, research and examinations. The Executive Council/Syndicate as the principal executive authority at times transacts academic business on the pretext of urgency. It is not uncommon for the Executive Council to approve academic matters forwarded by the faculties and board of studies and reporting its action to Academic Council. Such actions may be legally correct but are democratically corrupt. The Executive Council defends its action on the ground of urgency since the Academic Council meets twice a year. Further, university Acts empower the Executive Council to dispose of academic matters such as appointment of members of Board of Studies, examiners, moderators, publication of results including Ph.D. theses, approving the academic decisions made by the Vice-Chancellor, etc. Strictly speaking all academic matters should be under the purview of the Academic Council. The report on the Standards of University education has aptly remarked, "Bodies like the Senate and the Syndicate are concerned with administration in the narrow sense of the word and should not concern themselves much with academic matters or trespass into areas with which they cannot deal competently"⁽¹²⁾ The major built-in defect of the Academic Council is that it meets only twice in a year. The Executive Council defends its action on the basis of urgency and justified

its decisions since it is the executive authority of highest order. The Kothari Commission had suggested that the "Standing Committee" of the Academic Council may be constituted for the purpose of disposing of urgent academic matters. When Executive Council makes academic decisions it has no sanctity because the Academic Council is the principal academic authority with a responsibility for the maintenance of the standards of teaching, research, extension and examinations in the university. Therefore it is necessary to create an executive authority of the academic council known as "Academy" which can take all academic decisions. Prerogative of the Executive Council by which it is currently empowered to make decisions on academic matters should be transferred to the "Academy". If there are any operational constraints in the implementation of the "Academy" decisions such as finance/administrative difficulties, the matter may be referred to the Executive Council/Syndicate for its concurrence. All the actions/decisions of the "Academy" should be placed before the Academic Council for ratification. As far as possible the "Academy" should take routine and emergency decisions and new decisions/breakthrough decisions should be taken at the Academic Council session only. The "Model Act" Committee has suggested that the Academic Council should remain sovereign in its field and assume responsibility for academic standards. It observes "If it makes a mistake and lowers the standards of the university it assumes the responsibility for the poor estimate in which the degrees of that university will be held".⁽¹³⁾ This statement equally applies to the "Academy" which is the executive committee of the Academic Council.

4. Management of Departments

An important function of the Executive Council is the management of teaching cum research departments. The department is the primary task centre of the university. It is a group of scholars brought together with a common subject matter interest. The university organizes several service departments such as library, workshops, instrumentation centre, computer centre, press and publications to provide support to teaching departments. The university also provides multiple and complex of services for all the above units such as power, water, transport, communications, maintenance, etc. The university has a statutory obligation to establish, maintain and manage university extension boards, information bureaus, employment guidance bureaus, medical & health services, etc.

The heads of study departments in many universities are in conflict with the administrative hierarchical structure of the university. Many academicians waste their time and energy at the cost of scholarship and research for the maintenance and development of the department. On the basis of academic assessment the UGC

and other funding agencies give grants for the development of department but utilization of these grants is a hard task. The reason is that the administrative structure of university adopts bureaucratic procedures, rules, regulations in administering the research grants. Some of the rules and procedures are inescapable but others could certainly be simplified and reduced to the absolute minimum. Administrative heads override the academic heads and very often they treat administrative heads as subordinates. The superfluous rules and regulations obstruct the utilisation of grants for the purchase of furniture, equipment, apparatus, etc. Many universities have not repaired creaking and cumbersome administrative machinery. Perhaps keeping this in view, Dr. Kothari Commission suggested "The departments of a university are its main operational units on the academic side. We are of the view that wider administrative and financial powers should be delegated to them".⁽¹⁴⁾ The UGC is repeatedly requesting universities to confer autonomous status on academic departments and colleges, etc. As per Andhra Pradesh Universities Act 1991 the Board of Management has power to confer in consultation with the Academic Senate either *suo motu* or on a representation received in this behalf from a college, autonomy on any college in the university area and to likewise withdraw such autonomy. But there is no provision to confer autonomous status on university departments. In Maharashtra universities, the Executive Council has power to confer autonomous status on university departments, colleges and recognised institutions on the recommendations of the Academic Council and the Senate.

One of the duties of the Executive Council is to accept donations, grants, etc. on behalf of the university. Whenever the UGC or any other funding agency gives grants to particular academic department for doing research/teaching then only members of the Executive Council become aware of the working of the particular academic department/postgraduate centre, etc. Generally the Executive Council is ignorant of the working of the academic departments. The Bombay University Act has made a provision under powers and duties of the Executive Council to arrange for inspection of university departments and postgraduate departments in colleges with a view to assessing their academic performance and needs. Such provision should be there under the power and duties of Executive Council in every university Act.

It is also the duty of the Executive Council to provide necessary infrastructure with utilities, etc. for the proper working of the university departments. Science and Technology and Engineering departments are dependent on technical staff to carry teaching, research and extension. Of late many non-teaching professionals who support academic staff are closely associated with

faculty members in the performance of their functions. But at the same time they do not enjoy the rights, privileges and status the faculty members are entitled to. Many universities are facing problems in assigning appropriate status to the new categories of professionals.

Similarly the university is also dependent on professional/technical staff for the successful maintenance of medical and health services; electrical, civil and mechanical services; press & publications, etc. Thus the university has to maintain coordination and balance between various segments of employees : teaching, non teaching professionals, technical and administrative staff. It is quite unfortunate that no one thinks that they are all working in one institution with common mission and objectives.

5. Management of Affiliated Colleges

Every affiliating university Act defines what is meant by affiliated college. According to the Karnataka University Act 1976, "College means an institution maintained by the University as such and includes an institution admitted to the privileges of the university in accordance with the provisions of this Act".⁽¹⁶⁾ Thus there are two types of colleges : university maintained colleges and affiliated colleges. Both are equal according to the spirit of definition. What is required is equal treatment among equals. A committee has spelt out the real meaning of affiliation in the following words "The present bond of affiliation is far too tenuous, and the colleges, particularly the smaller and more distant ones, cannot acquire the feeling of being part in real sense, of the university. Affiliation, from the latin *filius*, a son, has the meaning of being adopted as a member of the family; but in practice one might suppose it to have been derived from *filus*, a thread, as though the colleges were connected with the university merely by a string".⁽¹⁷⁾ Through the string of affiliation it prescribes the physical and academic standards to be met by colleges. The affiliated college as an institution offers instruction in courses of study as prescribed by the university and prepares students for the examinations held by university. The examinations are the prerogative of the university. It has the power to inspect the colleges and scrutinise their physical and academic standards. Thus the existing administrative relationship is that of superior-subordinate between the university and the affiliated college. The academicians who are working in the colleges and university are equals in qualification but they are unequals in the academic process of decision taking. The university professor sitting at the campus feels superior when compared to the professor of an affiliated college who is geographically separated from the campus. Some of the university teachers want to exercise control over the college teachers through academic administrative power rather than academic competency.

The college teachers are participating in the academic organs of the university such as boards of studies; faculty and academic council but the majority of participants are university teachers. The university teachers in the academic bodies pronounce academic dictation and the college teachers should take down the dictation. The UGC is advocating autonomous colleges so that the colleges will be freed from dictatorship of a university. But the autonomous colleges are semi-autonomous in status and they are also part of the affiliating system. There are two types of affiliated colleges : Affiliated autonomous colleges and affiliated colleges.

The affiliated colleges are participating in the Senate and Executive Council of the university. Generally the principals of affiliated colleges (generally limited to 1/3) will sit as ex-officio members and some teachers of affiliated colleges through nomination/election. Only a few courageous principals ventilate their grievances against university administration, that too with regard to proper conduct of examination in the Senate. It is also customary that one or two principals of the affiliated colleges either by nomination/election are on the Executive Council. The competency of principals to contribute in the decision making of a university administration is negligible.

Perhaps keeping all the above facts into consideration the Kothari Commission had recommended a separate authority known as "Council of Affiliated Colleges" for the proper development of affiliated colleges. The UGC suggested "there was an urgent need for creating an appropriate body at the university headquarters for ensuring proper planning and integrated development of affiliated colleges and to provide the colleges necessary help and guidance".⁽¹⁸⁾ It also suggested the size, composition and functions of College Development Council and that should be one of the authorities of a university. The CMU while making suggestions for the decentralisation of a university has suggested "Every university having colleges affiliated to it should have a Collegiate Council presided over by the Vice-Chancellor of the University and it should be the final authority on all matters connected with the collegiate wing of the university".⁽¹⁹⁾ The Dean/Director of collegiate education should be the Secretary of the Council. The entire affiliation fee should be budgeted for the activities of the Council. In this manner the university should move from the administration of affiliated colleges to the management of affiliated colleges.

6. Management of Students

The new mission of the university is achieving an ideal democratic community within the institution. The major segments of university community are faculty and students. Both faculty and students as members of the

university community should participate in the decisions that affect them. The participation of students and teachers in the management of a university is consistent with democratic values of university community.

Dr. Kothari Commission has observed "As one positive step to encourage students to take part in university government and to make them to realise their responsibilities in the day to day functioning of the university, we recommend that representatives of the students community (including undergraduate students) should be associated with the Academic Councils and Courts of the Universities".⁽²⁰⁾ Thus the Commission was in favour of student participation in the two highest authorities i.e. Senate and Academic Council. The subsidiary authorities of the Academic Council are Faculty Council and Boards of Studies. The students should participate in the Boards of Studies at the department level and Faculty Council at the faculty level. But the CMU is not in favour of student participation in the Academic Council and Board of Studies. The CMU says "Students should be given opportunity for participation in the Senate/Court but not in the other bodies like Syndicate, Academic Council and Board of Studies".⁽²¹⁾ Perhaps the CMU thought, the students are transitory, young, immature and inexperienced and their competency is questionable in the academic decisions.

"No person has the right to make a decision that affects the lives of others" is a popular democratic slogan. Today students are seeking admissions into higher education as a right rather than a privilege. They are entering higher education with different socio-economic backgrounds unlike traditional students of affluent background and also with twin objectives of upward social mobility and gainful employment. The teachers are not making efforts to understand the behaviour pattern of modern students and develop an alien nature towards student community. The mutual confidence and trust has been shattering and crisis of confidence has been developing. Whenever Board of Studies makes a change in the curriculum, the student is suspicious about the motives behind change. He knows today's teacher is more concerned with his growth and advancement rather than student advancement. What is good for the teacher may not necessarily be good for the student. It is not uncommon that obsolete specialisation subjects are forced on students for the survival of teachers. Certain specialisations/subjects have neither academic viability nor employment potential, still the university offers them on the advice of academicians.

In the words of James A. Perkins "The academic process is now viewed as one in which teacher and learner are equally involved, both in the selection of topics and in the manner in which these can be taught. As students insist on the right to participate at the point where decisions are made about the content of their instruction they are focussing on the department".⁽²²⁾

As mentioned earlier the Board of Studies is the basic authority attached to each department of discipline for the determination of academic task of the department. The academic autocracy should be changed into academic democracy through participation of students in the Board. One need not question the academic competency of a student or the effectiveness of student participation in the Board. What is important, however, is that the students have an opportunity to influence the university affairs. The mere presence of students in various authorities has affected decisions in some universities as some professors have been reluctant (or even afraid) to take positions publicly that are unpopular with the students.

One of the major functions of the Executive Council is to promote the health and welfare of students. The major cause of student unrest on the campus is the inadequate student services which constitutes an integral part of education. The students are demanding a greater voice in the management of student services. The important student services are living facilities, counselling and guidance services, student activities, health services, financial aid, etc. The CMU has opined that the student participation should be necessary in the following forums : (1) Committees concerned with the corporate life of students and extra-curricular and co-curricular activities; (2) Advisory committee for halls of residence/hostels etc., and (3) Committee for games, social services and cultural activities. Many universities have constituted the above committees and students have been participating in them but the anticipated results are not forthcoming. There is no central agency to coordinate all these activities and to estimate inputs that are necessary in the performance of various activities. The Maharashtra State had made a provision in the universities Acts for the creation of "Student Council" and identified it as one of the authorities of the university. The Act prescribed the composition and size and the Council. The Vice-Chancellor is ex-officio President and the Director of Student Welfare is ex-officio Treasurer of the Council. There is a students executive union which shall implement the policy decisions taken by the student council. The functions of the council are to :

- i) Supervise and coordinate the activities of different students' associations, societies and other organisations;
- ii) Recommend to the Executive Council the financial allocation to be made for the activities to be undertaken under the relevant budgetary heads;
- iii) Allocate funds for different activities of students' associations, societies and other organisations, as sanctioned by the Executive Council;
- iv) Submit an annual report of its work together with a statement of its accounts to the Executive Council, within a date to be fixed by it;

- v) **Make recommendations to the Executive Council regarding any matter affecting the corporate life or welfare of the students; and**
- vi) **Make recommendations to the Executive Council regarding the facilities existing for instruction.**

The CMU also recommended that such a Council should be constituted in every university.

The complex activities of a university are difficult enough to be managed by the single authority i.e. Executive Council. The high concentration of power under one authority is not desirable and authority of the Executive Council should be distributed by creation of new authorities. Further, the traditional authorities are not able to cope with changing environment of a university. The traditional authorities should be redesigned/restructured and new authorities should be created, wherever necessary, in the management of universities.

(Concluded)

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Educational Administrators

(Contd. from page 3)

Life transitions challenge people and require them to grow and adapt to meet the demands of new roles. This is the environment that explains the widespread participation of adults in education and it will explain their continued large scale participation in education in the years ahead. Therefore "our people must be knowledgeable, as well as trained, as competent, and as inventive as those in any other nation. All of our people, not just a few, must be able to think for a living, adapt to changing environments, and to understand the world around them. They must understand and accept the responsibilities and obligations of citizenship. They must continually learn and develop new skills throughout their lives. We must recognize that education is a life long pursuit, not just an endeavour for our children (Aslanian, 1992)". This agenda of the "National Goals for Education" put forward by the White House is the greatest challenge of the future facing the educational administrators of all the countries of the world.

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Towards a New Education Policy and Response of UGC

N.L. Mitra*

Changing Needs and Challenges

Higher education is at crossroads inasmuch as the Indian economy. It is time for academics to ponder over the holistic need of future India's higher education, its entire economic, social and scientific requirements with a view to take appropriate steps for laying down an adequate infrastructure for university education and research. Otherwise, a faster 'need' shall overtake the 'system structure' and we have to lament on the 'System failure'! It may be noted with interest that the present central government's decision, with or without external pressure, rightly or wrongly, to open the economy without making appropriate fiscal and financial structural regulation ended into a wild trading of PSU shares and stocks and the Government comes with an alibi of 'system failure'. It is not difficult to imagine that a sudden change of Nehruvian model that is built in an effort of about forty years, without making suitable structural adjustments shall create immediately a sudden vacuum resulting in system failure. Whether or not should we change the model and pattern of economy is not my concern here. The concern here is, given the present trends in India and world over, what structural readjustments do we need for higher education and research.

In no time in the past, frontiers of knowledge developed so widely and rapidly as it is now. As such, it has become incumbent upon the institutions of higher learning and research to establish a system of inter-communication both at the national and international level, specially matters relating to applied research and educational technology. Role of Universities in community and social leadership is bound to increase manifold. Whereas universalisation process and liberation movement are bound to have an impact on social science studies and enquires, fundamental and integrated research in pure and applied science and technology education shall give a new dimension to university education and research. Universities are going to have a dominating role in the movement of integration, liberation, human rights, universalisation and humanisation.

In the changing circumstances the autonomy drive for university's identification is bound to gather momentum. That shall require an auto-design in management of higher education and research with much more accountability, wider participation of the teaching community and the taught. Any kind of state intervention or

conditionalities are bound to be looked down upon. That shall require a rapid development of academic administration as a district branch of management science. Resource generation and mobilisation, institutional investment modelling, strategic decision making, communication technology and networking, media use, public relations, social leadership and extension services are going to be some of the basic features of academic administration.

A Critical Look at UGC's Structure and Functions

In the planned model of Nehruvian economic structure education has a consideration for playing a demarcated role. In fifties and sixties the main task was rapid expansion of production technology and appropriate science and technology education at the quickest possible time. In that set-up there was a little scope for private players in the higher education and research. As such, two structural designs are prescribed in the University Grants Commission Act, 1956, viz.,

- (a) University education is brought absolutely under state sponsored institution through legislation;
- (b) A central authority is established to 'Coordinate and determine standards' of universities.

In this model you require a central authority to distribute state fundings and lead universities to a design laid down for higher education and research. Initially, the intention remains as the appropriation of meagre resources for optional beneficial utilisation. But like any other controlling and regulative agencies, this institution also starts functioning power-centric becoming an alter-ego of higher education. An elaborate bureaucratisation necessarily creeps in. Red-tapism hydra-headedness in functioning are by by-products. There is over-centralisation of regulative power. But the most important objection that can be made is the discriminative treatments. Whereas the educational facilities are far more easily available in metropolitan and mega-cities the same can be created with lot of difficulties and expenditure in rural areas, the investment pattern is just the reverse. The investment per student in metropolis and mega-cities is much more than that of, in District and rural areas. Similarly, investment per student in central universities is much higher than that of, in state universities. Such disparities are bound to bring in conflicts under constitutional framework itself. It violates the mandate of providing 'equal opportunity' to each citizen. In fact, the present system structure degenerates into 'rich becoming richer' and 'poor becoming poorer' as more facilities of state investment in education are enjoyed by those who could have personally afforded it, at the cost of those

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whom the state should have given more facilities to create an opportunity of 'equality of opportunity'. In near future, this structure is certainly going to be questioned. In fact, if it is allowed to function in its present form the institution is bound to degenerate for want of adequate resources, bureaucratic staffing and functioning. It may be, at one time, difficult for this institution to manage its own household with meagre resources, rapidly increasing demand and multi-dimensional pressure.

Changing Needs of Higher Education

Rao government has not yet come with a new education policy presumably because emergent economic policy engaged its whole-hearted attention. It may also be thought that an 'infra-structural' systematic redesign shall naturally reflect in the readjustment in the 'super-structural' process which includes the educational system. The last National Policy on Education, 1986 promises to develop a national system of education. In the higher education, it makes a programme professing :

- (a) In higher education in general and technical education in particular, steps will be taken to facilitate inter-regional mobility. Only with such a mobility, according to the NPE 1986, can the universal character of universities and other institutions of higher learning be understood.

(refer to para 3.8 of the NPE 1986).

- (b) A 'network' between different institutions in the country to pool their resources be arranged

(refer to para 3.9 of the NPE 1986).

- (c) The nation is to assume responsibility of providing resources for educational transformation.

As such, NPE emphasises the need for strengthening institutions like the University Grants Commission, the All India Council of Technical Education, the Indian Council of Agricultural Research and Indian Medical Council (see para 3.12 of NPE). NPE outlines that higher education has to contribute to national development through discrimination of specialised knowledge and skills. NPE assures protection to the higher education system from degeneration with a programme of (a) consolidation of existing about 200 universities and 7000 colleges; (b) developing colleges with autonomy for change over from affiliating system 'to a freer and more creative association of universities with colleges'; (c) emphasising linguistic competence and designing courses with wider choice and to meet the demands of specialisation; (d) regulating admission to capacity of institutions; (e) developing orientations of teachers; (f) encouraging research in fundamental sciences and technology; and (g) supporting research in humanities and social sciences and specially developing interdisciplinary research.

For all these the NPE indicates that state level planning and coordination of higher education to be done through Councils of Higher Education and University Grants Commission through their coordinated enterprise specially for keeping 'a watch on standards'. It also assures that distance educational technology shall be used more and more and Rural Universities shall be developed and consolidated (see para 5.24 to 5.42 of NPE). The policy talks about greater role of teachers in the management of institutions and emphasises multiple roles of a teacher in character building.

A New Structural Design of UGC

What is presently required, is a new structure of this University Grants Commission, more democratic and participative, coordinative and strategic, evaluative and reciprocative. It cannot be a mere bureaucratic funding agency. The restructuring is to be in consonance with the policy of de-emphasising the centralisation process. From structural point of view, the UGC is required to be :

- (a) Constitutionally established to be autonomous;
- (b) Decentralised at least into a few regional centres;
- (c) Democratically constituted, based upon the direct participation of Vice-Chancellors and Principals of autonomous colleges, directly at the regional level and through representation at the apex level.

Functionally the Commission shall have supportive services in the form of :

- (a) running Academic and Administrative Colleges for University/ College teachers and administrators;
- (b) information networking ;
- (c) extension services ;
- (d) running sponsored research activities ;
- (e) distance education ;
- (f) information dissemination; and
- (g) leadership development programme.

The Commission must have advisory function to suggest ways and means in raising resources for higher education and research. The Commission must itself carry on researches and studies in educational technology through universities and colleges. The structure of the UGC must be such that it can build up a work-culture through a leadership development process. Of course even a constitutional framework of the Commission cannot change the structural and functional aspects in our universities unless a new structural system is envisaged for our universities. UGC to be a collaborative and cooperative agency requires universities to be more strong, active and autonomous. Even a Model University Code presently includes a bureaucratic dominance in university set up. A new draft is required to de-emphasise political interference and emphasise autonomy.

Mobilization for Literacy

G.B.K. Hooja*

In his message on the occasion of International Literacy Day (8 September 1991), the Director General of UNESCO said :

"We know that it is a vain hope to wish to eradicate illiteracy while the level and quality of primary education remain low. To eliminate this blight, a two-fold strategy must be applied, targeted equally at unschooled young people and adults, and at primary school pupils.

To implement a strategy of this kind, which must be world-wide and integrated, requires – as we all realize – the mobilization of considerable resources. If it is to succeed, it requires a strong and sustained political will on the part of States. It also requires, particularly where literacy is concerned, strong motivation on the part of learners and teachers. Lastly, it requires the commitment of the international community as a whole.

The countries with the highest illiteracy rates also rank among the poorest in the world. The struggle against illiteracy is, therefore, inseparable from the struggle against underdevelopment, and the right to education is inseparable from the right to a decent life.

.....Women form a priority group. They are often the poorest of the poor, even when they play an essential economic role in the family and the community. In five of the least advanced countries, 90 percent of the women cannot read and write. Do we realize the extent of the handicap this automatically involves for their children ? These children will be the Earth's inhabitants in the twenty-first century, who will be very numerous on a vulnerable planet. It is for us, for you, to see that they know who they are, what their life in the community means on this earth, what it implies in the way of rights and duties, and that they can show their understanding and acceptance of this."

It may be noted that, while drawing attention to the threat and challenge arising from the menace of illiteracy, a two-fold strategy was outlined, to be targeted equally at unschooled young people and adults, and at primary school pupils. As for the required resources to implement the strategy the Director-General enumerated strong and sustained political will on the part of States, in the first place, to be supplemented by strong motivation on the parts of learners and teachers, besides the commitment of the international community. The mobilization of these resources raises formidable issues.

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Multisectoral Strategy

It may be appreciated that, even given the strongest will, the education ministry cannot, on its own, eradicate illiteracy. The task must be shared by other national and local bodies.

Ministries such as agriculture, health, social welfare and labour already have their own training programmes, which can be adopted to the literacy campaign. In many states, the justice/home department provides literacy courses in prisons. The ministry of defence and the armed forces can help in many ways, such as organizing literacy courses for their own recruits or providing teachers from military personnel.

Similarly, universities can contribute to literacy campaigns by providing literacy classes using students and staff; providing initial and in-service training for literacy teachers; designing programmes and courses; providing evaluation services. They can carry out censuses and evaluations, take the lead in running literacy centres and libraries, create teaching materials, and motivate people to become involved.

Voluntary agencies, often known as non-governmental agencies or NGOs, are vitally important. Religious groups, scouts and guides, women's and students' groups, agricultural cooperatives, trade unions and many others can help. These groups are particularly effective because they are in close touch with local needs. They will often carry out work that is difficult for the ministry of education and they can accomplish a great deal for modest amounts of money. Sometimes they may not require any money at all, but simply public recognition and encouragement.

Resources

Yet, the importance of financial resources cannot be underplayed. Even where there is a real will to combat illiteracy, a lack of funds may prevent progress. Many countries find that the shortage of money is the single most important obstacle to establishing universal primary education. How can we increase levels of literacy with the available resources ? How can more funding be provided and used in the best possible way ? Of course, someone has to pay the bill, but it doesn't always have to be the government.

Laws may be passed which oblige businesses to educate their work force. In some countries, laws or tax concessions have been used to encourage businesses to promote literacy. They are encouraged to train their own illiterate staff outside normal working hours, or to give them time off to attend classes. Or they may sponsor literacy classes in the neighborhood by, for example, paying for literacy materials.

A straight forward increase in the education budget can be achieved by a special tax on businesses and those

families earning above-average incomes. In the Republic of Korea, a successful 'education tax' has been imposed. Another example in Australia where businesses of a certain size are required to spend part of their budget on training, or else this amount is deducted in tax. Alternatively, tax concessions may be offered to firms which support literacy activities.

However, such measures may be employed only if there is the political will and social commitment to fight illiteracy. As a UNESCO document states, 'Political commitment and imagination are the most essential and effective resources against illiteracy.' Given political will and social commitment, ways and means can always be found to generate finances and to mobilize resources.

Alternatives to regular school can cut costs. Non-formal education, in which students meet their teacher outside school houses, has been found to be very cost-effective for adults. Multi-shift schools are another well-accepted measure to enroll children in school for less expense. Existing schools, colleges and universities can help by staying open for literacy classes outside their normal hours. Literacy teachers and helpers can also be recruited from among school-teachers, school and university students, retired civil and military personnel, social workers, housewives.

Content of Education

It cannot be stressed enough that adult illiterates need special books and teaching methods. They cannot be taught in the same way and using the same materials as children. Adults find children's books boring, irrelevant and demanding, and they will quickly lose interest.

What children learn in school is often designed to give them access to the next higher level of the education system. This is not appropriate for adults. What adults need is knowledge to solve the immediate problems of everyday life. The content of lessons must be relevant to their daily needs.

Presenting literacy as part of everyday life means using subject matter from the world of work and from society in general. If literacy is linked to vocational education, adults can learn to read and write at the same time as learning a skill they can use to earn money. Where literacy fosters greater self-reliance and self-employment, it is all the more acceptable.

An important function of increased literacy is that people can play a more active role in changing society for the better. This means that subjects of broad general interest should be included as well, such as basic legal, civic and political knowledge, local history and culture, health, hygiene and public sanitation. People can be taught how to improve their standard of living and to play a role in the community. These days, everyone should also learn about environmental protection, child care, family life education, drug abuse.

Educational Approaches

At the initial level, reading primers, kits and guidelines for teachers are the main materials for most

literacy programmes. They may cover literacy in the mother tongue, numeracy, vocational skills and citizenship. Whatever their subject matter, they should be attractively presented and there should be enough of them.

Lessons can be made stimulating and lively by using active approaches, such as small-group discussions, acting out real-life situations, taking excursions. Peer teaching and self-instruction should also be encouraged. By providing variety, these methods increase the motivation and self-confidence of the learners. At the same time, they serve to reduce dependency on the teacher. However, guided learning with written exercises and spoken questions and answers between teacher and learner constitutes the most powerful approach. Thus the role of the teacher is vitally important.

Distance education is another way of teaching outside the classroom and is often used for post-literacy programmes. People in remote areas can be reached by radio and television, periodicals and newspapers, particularly given the support of the postal service. Despite its name, this method achieves a greater degree of success if there is personal contact from time to time between the teacher and the learners.

Language of Learning

In what language should a person learn to read and write? Language research suggests that learners advance more quickly in the mother tongue, at least during the first few years of learning. Mother tongue teaching strengthens cultural identity and also makes it easier to find teachers locally. Yet, there are disadvantages as well. Small linguistic groups can become isolated and shut into a sort of linguistic 'ghetto'.

Whatever language is used for literacy training, it should have the following characteristics to the nearest degree possible:

- be familiar to and preferred by learners and their teachers;
- be spoken by a large number of people over a large area;
- be useful for communication in local and national life, and particularly in working life;
- be well supplied with teaching materials;
- availability of enough printed texts to prevent newly-literate people from forgetting what they have learned.

The Role of the Teacher

As observed earlier, in any attempt to improve education, the teacher is the key. It is through the teacher that all the efforts of policy makers, administrators and campaign organizers are channelled to the object of the entire exercise, the learners themselves.

Whatever their background, literacy teachers require training if they are to teach adults successfully. The teaching of adults is much different from the teaching of children. Adults vary widely in their backgrounds, experience and expectations. Teachers need

to be aware of this. They have to establish good relations in an atmosphere of trust, avoiding any temptation to use authority. They must advise adult learners on their strengths and weaknesses, and guide them in their choice of learning materials.

The teacher may also find that he is expected to be a community training officer or to form part of the village area development team. He may even be expected to play the role of social adviser, since literacy changes people's image of themselves and their abilities.

All this calls for adult education teachers with dedication, wide-ranging knowledge and skills, and the ability to analyse problems and take action. For this, in-depth and continuing training of the literacy personnel is of primary importance.

Unquestionably, the role of the adult educator is not a simple one. For this reason alone, the salary of experienced adult educators should be at least equivalent to that of primary and secondary school-teachers in the formal system.

Teacher Training

As stated above, good initial and continuing in-service training are essential for all categories of teachers. Volunteers, especially, should be given some introductory training, since they may not have any previous teaching experience. This will also help to maintain their goodwill and enthusiasm.

As well as teachers, other literacy personnel and educational administrators need training in the curriculum and teaching methods, planning and management, research and evaluation. Publishing guidance manuals for adult literacy teachers has proved extremely useful in some countries. Head teachers and school inspectors will also benefit from training in running schools and organizing literacy courses.

In practice, the training that most literacy personnel receive is often inadequate, varying from none at all to short courses. Where courses are available, they take the form of seminars and workshops on the development and use of literacy materials.

They may last from a mere few hours to a few days, and thus require to be supplemented by continuing education in the form of evening classes, lectures, demonstrations and visits.

Frequent residential refresher courses lasting two to five days during school holidays are beginning to be found all over the world to effectively maintain skills and enthusiasm. Distance education is particularly useful for the in-service training of teachers.

Evaluation of Learning

The matter of evaluating the performance of adults is yet another important aspect of the programme which has to be approached with great caution. Experience suggests that any form of disapproval shown towards adult learners tends to discourage them so that they drop out of literacy courses. This can pose a problem since society and employers expect a certain standard

of literacy to be reached. Hence the question arises as to how a satisfactory level of literacy may be reached if you cannot criticize adults? It is now believed that, if the learning objectives have been clearly agreed upon at each stage of a literacy course by both the learner and the teacher, then adults are themselves capable of noting their progress and of putting right their shortcomings.

Thus informal self-evaluation is particularly appropriate for adults and is a good way of involving them in their own learning. However, this remains an area which calls for further research.

Evaluation services need to gather and examine information to find out which factors promote success or lead to failure, and to pass on the information to campaign planners. They must know early on whether the campaign is on the right track in order to quickly implement any changes, if necessary.

Information Exchange

There is a growing corpus of literature on how to tackle the vast problem of illiteracy. Many developing countries/states benefit simply from the exchange of experience with other countries/states. This means making information available about successful literacy programmes in different areas, in particular, experiences with regards to language of instruction, how to satisfy the basic learning needs of different groups, and how to reach people in remote areas.

By exchanging information and experience, and by sharing facilities and undertaking joint activities, neighbouring countries/states can help each other. Note that the true spirit of partnership does not mean transferring models from one region to another. For long term success, each country/state must identify its own basic learning needs, and then turn to its own people to find the means to satisfy them.

Summary

To conclude :

- (1) Eradication of illiteracy requires a two-fold strategy, targeted at young adults, and primary school pupils.
- (2) It requires vast resources, which can be mobilised if there is strong and sustained political will, motivation, and social commitment.
- (3) It calls for imaginative and innovative practices.
- (4) Requirements of adult education should be distinguished from requirements of child education.
- (5) Learning material for adults should be related to their everyday interests and needs.
- (6) Since the role of teachers is of primary importance, their initial and continuing in-service training must receive high priority.
- (7) Evaluation of the progress of learners should be devoid of any patronizing stance. Self-evaluation is the preferred method for sustaining interest and enthusiasm.
- (8) There should be on-going exchange of experience through various fora, with a view to developing local level appropriate strategies.

Academic Cafeteria

"The majority of our universities are content merely to play the role of academic cafeteria offering junk food for the mind. Without the guidance which can be derived only from a liberal education, a whole generation has grown up which is content to see crime and violence, casteism and communal frenzy, become the order of the day," said the eminent jurist, Nani A. Palkhiwala, while delivering the Convocation Address at the forty second annual convocation of SNDT Women's University, Bombay. He added, "Education is the rock on which India must build her political salvation. Our country will be built not on bricks but on brains; not on cement but on enlightenment. If we cannot afford education, we cannot afford to remain a civilized society." Excerpts

Barbara Wootton, one of the great champions of higher education for women, died four years ago at the age of 91. She has written a fascinating autobiography entitled, "In A World I Never Made". She observed, "The laughable idealism of one generation evolves into the accepted commonplace of next". She lived to see the truth of her dictum proved right time and again, particularly in the field of female education.

Today, some of our most distinguished High Court judges are women like Mrs. Sujata Manohar; but no lady was appointed a judge of the High Court before the middle of this century. Till the last century it was assumed that women were unfit to get degrees. London was the first British University to overcome the prejudice against the fair sex. It threw its degrees open to women in 1878. The Bombay University conferred the Bachelor of Arts Degree (First Class) on the first women student, Miss Cornelia Sorabji, in 1888. The first woman member to be nominated to the Bombay University Senate was in 1891. Oxford and Cambridge took a much longer time to get over their male chauvinism. These facts will give you an idea of the magnitude of Maharshi Karve's

achievement, who founded this Women's University in 1916.

Another pioneer in the nation-building activity of female education was Dadabhai Naoroji. Sir R.P. Masani, who has written the standard biography of Dadabhai, relates how Dadabhai used to tell his grandchildren some stories of his early days – how as a college student he would go from house to house with a friend, persuading parents and guardians to allow him and his friend to sit on their verandahs and to teach the three R's to their girls; how some of them took advantage of the offer; and how two or three irate fathers threatened to throw down the steps for making such a preposterous proposal! The biographer adds that in those days to capture a pupil was sometimes as difficult a task as to conquer a city: against the promoters of female education were arrayed the forces of stern orthodoxy and the misgivings of the ignorant regarding the consequences of such a movement on the social life of the people.

Education is the technique of transmitting civilization. Ralph Waldo Emerson observed that ancient India had reached the summit of human thought. It is shocking that the country with the oldest and

greatest civilization should be so lackadaisical about the technique of transmitting it.

The Indian psyche remains today wholly untouched by any thought of the need for wider and more value-based education. Education has never been a high-priority item in any Indian political party's manifesto. The subject which should have galvanized the nation into action forty years ago is still kept in cold storage. The majority of our universities are content merely to play the role of academic cafeteria offering junk food for the mind. Without the guidance which can be derived only from a liberal education, a whole generation has grown up which is content to see crime and violence, casteism and communal frenzy, become the order of the day. More criminals have openly entered public life than ever before. No democracy can last long in such circumstances. Perhaps, only when we lose our democracy, shall we recall the words of Thomas Jefferson, one of the founders of the United States of America, "If a nation expects to be ignorant and free, it expects what never was and never will be".

It is now acknowledged all over the world that value-based education is the only instrument for transmitting national talent into national progress. Amongst the important countries of the East, India is the least adequately educated. Article 45 of our Constitution enacts:

"The State shall endeavour to provide within a period of ten years from the commencement of this Constitution, for free and compulsory education for all children until they complete the age of 14 years".

Elementary education is "free" in theory; but many one-room schools in rural areas are today without even a blackboard and chalk. "Compulsory" it is not, even in theory. Men in public life have always looked upon Article 45 as pious platitude which

is not calculated to give any mileage either to the politician or to his political party.

It is only through female education at all levels and the private initiative of well-educated women, that this country will ever be transformed into what our Constitution intended it to be. We have only to look around to see the difference between our apathy and the zeal and dedication of other nations in the field of nation-building.

The rate of literacy in South Korea is 98 percent. Its economic development is the predictable result of its uncompromising emphasis on education.

When *Lee Kuan Yew* was recently asked on the BBC as to what he attributed the phenomenal success of Singapore, his answer was in one word – "Education". He added that no subject had a higher priority in his city-State.

President *Mitterrand* started his second term of office in 1988 with the promise to make education the "priority of priorities". His election manifesto proclaimed, "In future the nation's power will depend less on its financial wealth than on its grey matter". He was as good as his word. In France, after the Prime Minister ranks not the Foreign Minister, not the Finance Minister, not the Home or the Defence Minister, but the Minister for Education.

In February 1991, the British Prime Minister, *Mr. John Major*, in a major speech put education at the top of his personal agenda for the 1990s, and said that education is the key to a "mobile, dynamic and diverse society".

In 1983, the National Committee for Excellence in Education, appointed by the United States government, publish a Report called "A Nation At Risk". The Report exhorted the government to take prompt and firm measures to raise the level of education, if the future of that country was not to be imperilled. If

the United States can be called "A nation at risk", would it be any exaggeration to call India "A nation in dire peril"?

Five years ago, *Professor Allan Bloom* (who unfortunately died last October) published his volume "The Closing of the American Mind". It has already sold a million copies. The sub-title of the book is "How higher education has failed democracy and impoverished the souls of today's students". The main thesis of *Professor Allan Bloom* is that the universities and schools are swamped with intellectual laziness bred from the doctrines propagated in the Sixties that everything is related and all values are equal. Our obsession with openness and equality has produced a generation bereft of vision and ignorant of its own culture.

A survey was conducted in January 1988 by the American Council on Education. Students were asked about their objective in pursuing higher education. An overwhelming majority of the students said that their objective was to make more money in later years. The motive "To develop a meaningful philosophy of life" ranked the lowest. The same malaise affects Indian students. No wonder that ancient Indian culture is the subject least often chosen by our youth.

In April 1991, *President Bush* called for "a revolution in American education". He announced a plan for national achievement tests. The President said that he would like to see the creation of non-traditional schools, some of which might be operated by private organizations or business.

As *The Economist* pointed out last month, investing in education is to the 1990s what nationalization was to the 1940s and privatization to the 1980s – the universal panacea of the day. Rightwingers value education partly because it promises to make labour markets more efficient; leftwingers partly because it gives a respectable role for state activism.

Economists on both sides of the political divide are agreed that human capital is the most precious form of capital there is. The skill and calibre of corporate manpower never appear in any balance sheet; but it is widely acknowledged throughout the world that the greatest asset of a company is trained manpower. In a book published recently by the famous economist *Julian Simon*, the human resource is rightly defined in the title of the book as "The Ultimate Resource".

Among the nations of the world, India ranks very high in innate intelligence, but abysmally low in wisdom – what the ancient *rishis* called *buddhi*. This is both the cause and the effect of our total indifference towards education. One of the consequences of the failure to educate our people is that we are oblivious of the need to combine freedom with order – order enforced by authority, and freedom exercised under authority. Liberty is a virtue which can never stand alone but, as *de Tocqueville* said, must be paired with a companion virtue : liberty and morality; liberty and law; liberty and justice; liberty and the common good; liberty and civic responsibility. The criminalization of politics and the deplorably low moral tone of our public life are the direct consequences of the failure to impart value-based education.

Liberty without accountability is the freedom of the fool. Our concept of freedom will remain an impoverished one, and until it is rounded and deepened we shall continue to work a third-class democracy under a first-class constitution.

Education is the rock on which India must build her political salvation. Our country will be built not on bricks but on brains; not on cement but on enlightenment. If we cannot afford education, we cannot afford to remain a civilized society.

I hope and trust your University does not have reservations on communal or caste considerations and

that, unlike some other colleges, it does not give grace marks in order to enable students to pass where the mark scored on merit is zero. "Firsts" should not be allowed to multiply; otherwise it would be like inflation – you start destroying the value of the currency.

At the last official count, the number of Indian universities was 181 – twice the number that existed twenty years ago. While the number of our universities and the number of our students proliferate, the level of edification does not keep pace. We continue to churn out ethical illiterates and moral idiots. Our education continues to be "value-agnostic" and "value-neutral". *Dr. Mortimer Adler*, the Chairman of the Board of Directors of the *Encyclopaedia Britannica*, said that true education can begin only after you have left school or college. All that a

school or college can do is to arouse intellectual curiosity and prepare you for lifelong education later.

Education is an end in itself; and not merely a means to an end like financial wellbeing. There should be no profit motive in liberal education, any more than in friendship. Then alone can knowledge ripen into wisdom.

The timeless lesson of ancient Indian culture is that man is an unfinished creature; he is only a caricature of man to be. Man is more than man, and there is more to the world than the world. Every age must take a step forward in evolution; but unfortunately India has been taking several steps backwards. Civilization is an act of the spirit. Let us admit with due humility that ancient India was far more civilized than modern India with its satellites in space.

A Brisk Review

Suma Chitnis

Excerpts from the speech by the Vice-Chancellor, SNDT Women's University.

The year has been academically rewarding. We have had a rich crop of quality Seminars and Conferences. Practically every postgraduate department and most of the conducted colleges have had one or two outstanding seminars to their credit. Not less than three have been of international stature. The Department of Library Sciences hosted the Thirteenth International Conference of MINISIS, the Computer System used by Libraries across the world. Just today the Department of Sociology completed an international multi-disciplinary Seminar on Bombay. Ten days from now we have an international Seminar of multi-disciplinary scholars from all over the world researching on Maharashtra.

The University has also been active in organizing in-service training

programmes of different kinds. For instance, in collaboration with the National Institute of Educational Planning and Administration, New Delhi, the Department of Education Management conducted a three-week training programme for Principals of Women's Colleges. With support from the UGC the College of Home Science has been conducting refresher courses for Home Science Teachers in the Southern and Western region of the country. With assistance from UNICEF and IDRC, the College of Home Science has also been helping the Government of Maharashtra to conduct field level training programmes for community workers. With the assistance from WHO and other bodies the College of Nursing has been conducting a series of refresher

courses, for personnel of different categories in the field of Nursing.

In a remarkable collaboration between the Federation of Obstetric & Gynaecological Societies of India, the College of Nursing, and Department of Continuing Education of the University has planned a series of courses on health education for women. The first of these was held in September.

Apart from collaborations for Seminars and Workshops, I must mention collaborations with the help of which we have been enriching our routine academic work by adding research, laboratory and field work experience which we cannot otherwise afford. Continuing from last year we have Memoranda of Understanding with BARC at Chembur, with NCST at Juhu, and with some pharmaceutical firms. Similarly we continue to have support from the IDRC, the Ford Foundation, UNICEF, the Wheat Associates, USA and more recently the British Council.

While the Conferences, Seminars, training programmes and collaborations for the purpose of enriching the academic programme are one indicator of the academic life of University – there are some other achievements worth reporting. The M.Phil/Ph.D programme has been substantially revised. It has been made much more interesting and rigorous. At the B.A. and B.Com level we have introduced a basic foundation course entitled "Women and Society". This course will equip students with some basic knowledge regarding the situation of women in Indian society and with the Constitutional and other provisions available to them. The first year examination at all affiliated and conducted colleges has been transferred from the University to the Colleges with a view to giving the Colleges some autonomy and increasing and enriching interaction between students and their teachers. Several other improvements are on the anvil.

Madras Varsity Convocation

Dr. M.S. Swaminathan, eminent scientist, called for the introduction of location-specific, non-degree training programmes in order to 'bridge the growing gap between employment opportunities in the rural areas and the skills needed to take advantage of such opportunities'. He was delivering the address at the 135th convocation of the Madras University recently. Dr. Swaminathan said constant tinkering with syllabus was not the answer but a consortium of educational institutions to end the mismatch between employment opportunities and employable skills could help. He suggested the creation of a Tamil Nadu Educational Consortium for Jobs spearheaded by the Madras University with suitable linkages for organising relevant non-degree programmes 'designed to impart skills related to marketing opportunities'.

The imparting of a pro-nature, pro-poor, and pro-women bias in developing both public policy and technology was also advocated by Dr. Swaminathan so that the growing rich-poor divide and environmental degradation could be arrested. He wanted a reordering of priorities to focus on issues like primary education, primary health care, gender equality, environmental hygiene, safe drinking water and sustainable lifestyles.

Deploing the growing violence into human heart, he urged the Madras University to take the lead in setting up a Conflict Resolution Centre where 'proactive analyses of emerging social problems can be undertaken and love and understanding of cultural pluralism and religious diversity can be promoted'. He quoted Gandhiji to the effect that no ecological movement against violence on nature was possible un-

less non-violence was made central to the ethos of a culture.

The challenge before the country today was achieving sustainable nutrition security involving, as it did, physical and economic access to balanced diets and safe drinking water to all citizens, Dr. Swaminathan said. All famine mitigation strategies implied providing work to those in need, and the current annual growth rate in employment opportunities had to be doubled during the rest of the decade if the country had to ensure that all the youth could have a satisfying life, he added. Referring to vocational education, he said frequent changes in the syllabi with the objective of jobs at the end often resulted in an erosion in the teaching standards of the basics in sciences and humanities.

In his report, the Vice-Chancellor, Dr. S. Sathikh, listed the activities and achievements of the university during the preceding year. These included the sanctioning of Rs. 638 lakhs by the UGC for the development of undergraduate courses. A sum of Rs. 224.5 lakhs for postgraduate development had also been allocated, he said. The Academic Staff College in the university had been acclaimed as the topmost in the country, he added.

The Chancellor and Governor, Mr. Bhishma Narain Singh, presided over the convocation in which the Pro-Chancellor and the Education Minister, Mr. C. Aranganayagam, participated. A total of 442 candidates among whom 258 were women took their degrees in person. Besides, 32,441 candidates were awarded various degrees in absentia, including 5,400 from the correspondence courses stream.

IUCCA Facilities Dedicated to Scientists

Nobel laureate Prof S. Chandrasekhar is reported to have recently dedicated to researchers, the facilities available at the Inter-University Centre for Astronomy and Astrophysics (IUCCA), an institution aspiring to become the hub of astronomical activities in the country.

The first theoretical astrophysicist to have won a Nobel prize for his contribution in the field of astrophysics, Prof Chandrasekhar, chose to dwell on the similarity of attitudes of scientists and artists instead of delving into the intricacies of astrophysics during his dedication address.

To prove his point, Prof Chandrasekhar alluded to the paintings of French artist Claude Monet, wherein the artist has endeavoured to depict various moods, although using same, immutable objects but in different settings. In a similar way in science too, a given set of mathematical structures, comparable to the artists' immutable objects, could be utilised to explain a large number of phenomena. Artists and scientists, Prof Chandrasekhar contended, are, therefore, not very far from each other in their attitudes.

Prof G. Ram Reddy, University Grants Commission (UGC) chairman, who presided over the function, assured all help to IUCCA, on behalf of the UGC, towards fulfilling its objectives.

Equipped with an electronic mail system and remote logging computers in a world-wide network, IUCCA hopes to bring Indian astronomers in close contact with their international counterparts, IUCCA director Jayant Narlikar said, referring to the objectives of the centre.

The centre aims to establish itself as a major research centre in astronomy and astrophysics and thereby serve as a national coordinating centre, to interact with all the universities in the country to promote astronomy and astrophysics. It aims to train manpower and promote culture of astronomical instrumentation, and to serve as a catalyst to encourage use of guest observer programmes at other major facilities.

In fact, IUCCA was established as an Inter-University Centre (IUC) to create centralised facilities, in the study of astronomy and astrophysics, to be shared by all universities and managed by an autonomous institution.

Braille Geometry Kit

The National Institute for the Visually Handicapped, Dehra Dun, claims to have devised a new braille geometry kit for the blind. The board in the kit can also be used as a braille slate.

The existing "Bonham device" can be used only with cellophane paper which is not available everywhere, specially in the rural areas. The new kit can be used with any kind of paper, even magazine paper.

Mr. Milan Dass, senior research officer at the institute, said "The government is today talking of integrated education. This device can be used by both the blind and the sighted simultaneously. In the existing device the sighted cannot see what is drawn. The geometric drawings can only be felt with the fingertips. Also, the impression appears on the underside of the cellophane paper which creates confusion of right and left sides for both the blind and the sighted teacher. In this new device, the impression appears on the upper side on the papers."

The new kit comprises a 30x30 cm board fitted with a hard rubber mat. Holes are drilled in the mat in straight lines and in a circle, all at a particular angle. Braille scales and

geometric instruments can be fixed in these holes with a clamp and a movable pin. As the user draws lines/circles, raised impressions appear on the upper side of the paper. This enables the sighted persons to see triangles and circles while the visually handicapped feel with their finger tips what they have drawn.

The kit comes complete with a braille scale and braille geometry instruments with a jagged ends-protractor, circular disc, divider and set squares. A marker, a screw-driver-like device to draw the lines against the jagged ends of the instruments, is also provided.

Users of this set can draw hexagons, octagons, squares, rectangles, circles, triangles and other geometric shapes easily. The kit can be used by the visually handicapped for their education, training or rehabilitation.

New Courses in SV Varsity

Sri Venkateswara University proposes to introduce five new inter-disciplinary Master's courses and two PG diploma courses from this month. According to the Vice-Chancellor, Prof. P. Jayarama Reddy the new courses are: M.Tech in Remote Sensing in collaboration with the National Remote Sensing Agency; Master's degree course in Rural Development and Appropriate Technology, in collaboration with the National Institute of Rural Development (NIRD); M.Tech in Atmosphere Science, in collaboration with Indian Space Research Organisation (ISRO) and MST radar station; M.Tech in Energy Conservation and Management, in collaboration with the Institute of Engineers, Bangalore; and Master's course in Systems Management.

One one-year diploma course will be introduced in Applied Nutrition and also a diploma course in Aquaculture.

Prof Reddy said the syllabus and curriculum were finalised for the

new courses and admissions will be made on the basis of entrance examination to be conducted this month. He said the State Electricity Board was asked to sponsor its candidates for M.Tech course in Energy Conservation and Management.

The Vice-Chancellor said the University was planning to introduce short-term computer courses for traders, hotel industry and others apart from the non-teaching staff.

Mysore Varsity PG Centres

The University of Mysore, proposes to set up two postgraduate centres at Mandya and Hassan in January. The University, already has two such centres at Mangalore and Bhadra Project (near Shimoga) which have today become universities—Mangalore and Kuvempu.

The Mysore Vice-Chancellor Dr. Madaiah, recently held discussions with the Minister for Higher Education, Mr. S.M. Yahya, along with members of the Syndicate and other representatives in this regard.

Kurukshetra University Regional Study Centre

Ch. Bhajan Lal, Chief Minister of Haryana, recently laid the foundation stone for setting up Kurukshetra University's Regional Study Centre at Hisar. Some of the innovative courses carrying high job potential proposed to be started at the Postgraduate/undergraduate level at Hisar Campus include: Physics – Instrumentation, Solid State Device, Applied Optics; Chemistry – Industrial Chemistry, Polymer Chemistry, Pharmaceutical Chemistry, Petro-chemical Chemistry; Technical – Consumer Electronics, Rural Technology, Construction Technology; Bio-Sciences – Agriculture/Ecology – Bio-fertilizers, Sericulture, Agri-Business Management, Ecology and Water Management, Bio-energetics, Bio-technology, Arid Zone Forestry, Forest Management;

Education – Education & Communication Technology; Sociology – Human Management and Development; History, Archaeology – History of Traditional Arts and Crafts, History of Visual Arts, History of Designs, Costumes and Fashion.

It is hoped that the proposed regional centre at Hisar, spread over a vast area of 216 acres, in times to come should take the shape of a University of Science and Technology.

News from Agricultural Universities

PAU to Publish Books on Agro-Industries

Dr. Khem Singh Gill, Vice-Chancellor, Punjab Agricultural University, said that the PAU would publish bulletins on agriculture based small scale industry. Keeping in view limited land, soil and water resources and increasing prices of fertilizers, the farmers must set up agro-industry, he stressed while presiding over the State level of PAU Farmers' Committee meeting held recently. The PAU bulletins will provide a detailed information regarding small scale agro-industry, subsidies, loan facilities and the training courses conducted by PAU.

This 27-member PAU Farmers' Committee comprises leading farmers of the state and serves the dual purpose of disseminating the latest technologies to other farmers and providing feedback of emerging field problems to PAU scientists to reorient its research and extension programmes accordingly.

Dr. Khem Singh Gill informed the committee members that bio-

technology had been added as a field of specialization in the 13 departments of the University. He disclosed that many new varieties of field crops, fruits and vegetables were in the pipeline.

A number of suggestions came from the leading farmers. They wished to add routine spray schedules of various crops in special issues of PAU monthly magazines, namely, '*Changi Kheti*' and '*Progressive Farming*'. Farmers from Faridkot and Ferozepur districts asked for close contact with PAU entomologists regarding attack of American Bullworm on cotton. A number of farmers stressed the strengthening of PAU extension programme regarding oilseeds specially sunflowers. A leading farmer from Jalandhar invited the attention of University scientists towards a new variety of cabbage developed in Japan. Dr. G.S. Gill, Director of Extn. Education, PAU said that a training course on hybrid varieties of American Cotton would be organised in Faridkot.

News from UGC

Countrywide Classroom Programme

Between 1st February to 6th February, 1993 the following schedule of telecast on higher education through INSAT-1D under the auspices of the University Grants Commission will be observed. The Programme is presented in two sets of one hour duration each every day from 1.00 p.m. to 2.00 p.m.

and 4.00 p.m. to 5.00 p.m. The programme is available on the TV Network throughout the country.

Ist Transmission
1.00 p.m. to 2.00 p.m.

1.2.93

"Operation Kaiko"

"Pre-Budget Scenario"

"Yours Sincerely"

2.2.93

"Organic Techniques – II"

"Hypnotherapy – Medical Uses of Hypnotism – II"

3.2.93

"Artificial Spawning in Frog"

"Corrosion – I"

"The Clock that Time Us"

4.2.93

"Electronics – I
The History of Electronics"

"It Moves It's Alive"

"Sarat Chandra"

5.2.93

"Statistics – II
Stratified Random Sampling"

"By the People : I
Your Stake in the Political Process and Politics and Conflicts"

"Warning for Warming"

6.2.93

"Interpreting Tamil Nadu Folk Performing Arts"

"Film as Literature"

"Week Ahead"

IInd Transmission
4.00 p.m. to 5.00 p.m.

1.2.93

"Operation Kaiko"

"Pre-Budget Scenario"

"Yours Sincerely"

2.2.93

"Preparation of Aluminium Chloride"

"So you are a Vegetarian?"

"Futurising Education"

3.2.93

"Structure of Steel"

"Man and Environment"

"Immunogenetics"

4.2.93

"Paul Emile Victor : Explorer of the Polar Regions"

"The New Narrative of Latin America – II"

News from Abroad

M.A. in Contemporary International Studies

The University of Hull, U.K., has introduced a Master's degree programme in Contemporary International Studies. This one-year full-time higher degree programme focuses on two critical problems in the contemporary world – the formation of 'communities' and the relations between them. It is designed to enhance understanding of the ways in which our world is both interconnected and fractured, at a time when global society is moving into a new and troubled phase. All students take a core course on this theme, tackled from the viewpoints of history, sociology and politics. An historical section deals with the evolution of the state and the relations between imperialism and nationalism over the past seventy-five years. A sociological section examines the social and cultural issues generated in some of the communities which have achieved independence in the same period. A political section looks at the regional and international organisations which have emerged in response to the challenges of a complex and often dangerous world.

In addition, they each choose an option from a wide variety in the fields of strategic studies, international law and international relations, imperial and diplomatic history, development economics, Commonwealth literature and the society, and politics of the European Community, Africa, India, the Caribbean and South East Asia. Linked to the option is a dissertation, through which students can explore their subject in depth.

The programme also includes a training element fostering skills in

research methods and information technology. It fosters traditional methods of research on primary and secondary source material, and promotes familiarity with the latest in information technology.

The degree is designed for graduates planning to embark on careers in business, administration, the services or the professions, and for those who aim to go on to do further research at M.Phil. or Ph.D. level, which Hull also offers. Students are eligible to apply for University of Hull scholarships and other awards.

Further details may be obtained from John Major, Department of History, University of Hull, HU6 7RX.

Open Varsities Association to Meet in Hong Kong

The VIIth Annual Conference of the Asian Association of Open Universities will be held on November 22-25, 1993 in Hong Kong and China. The theme of the conference is Economics of Distance Education. The Conference will be hosted by the Open Learning Institute of Hong Kong and will coincide with the first degree congregation of Asia's youngest dedicated distance teaching institution.

The four-day conference will be an important forum for the exchange of experience and information on the Economics of Distance Education. After two decades of practice, the distance teaching institutions of Asia are expected to learn from critical reviews of the past and point the way for the future.

Further information may be had from Professor G. Dhanarajan, Pro-

gramme Chairman, The Open Learning Institute of Hong Kong, 9-13/F, Trade Department Tower, 700 Nathan Road, Mong Kok, Kowloon, Hong Kong.

6th International Metrology Congress

The Sixth International Metrology Congress – Metrologie 93 – will be organised by the College de Metrologie of MFO (Mouvement Francais pour la Qualite) under the participation of the Bureau National de Metrologie in Lille, France on October 19-21, 1993. The aim of this congress, which takes place every two years, is to bring forth and highlight new techniques of measurement and calibration that have been or are being developed.

The topics proposed to be discussed include measurement uncertainties, traceability to standards, quality in metrology, accreditation of laboratories of metrology, control of a measurement process, standardisation in metrology, help to companies (in metrology), standard reference materials, environment control of laboratories of metrology, and new and inventive calibration methods.

The papers proposed to be presented are expected to be received from experts in all fields of economic activities concerned with metrology from universities, public or industrial laboratories of national calibration systems, manufacturers of measuring instruments.

The authors have the possibility of developing those topics either in a general way or by applying them to a specific field : length, mass, force, pressure (vacuum), vibrations, electricity from DC to radio-frequencies or microwaves, frequencies, temperature, hygrometry, flow measurement, optics, and ionising radiations.

Further information may be had from Secretariat Metrologie 93, Mouvement Francais pour la Qualite, 5, esplanade Charles De Gaulle, 92733 Nanterre Cedex, France.

Compact Disc – New Medium for Information Storage

B.K. Sen*

Charles Oppenheim, Ed. *CD-ROM : Fundamentals to Application*.
New Delhi : Aditya Books Private Ltd., 1992. xii, 308p. Rs. 325.00

Bibliometric studies conducted in 1950s provided enough indicators to show that literature in almost all fields of science was doubling in less than 12 years of time. In chemistry, the period was even less. During the decennium 1947-56 *Chemical Abstracts* included 5,43,064 papers and 1,04,249 patents. The number of items included in the next decennium 1957-66 almost trebled to provide a shining example of the unprecedented phenomenon of 'information explosion'.

The information explosion, and the rapid growth of literacy in the third world, continuously made the demand for paper stronger and stronger. On the other hand, the rapid depletion of raw materials required for paper-making occasioned by the denudation of forests, started straining the production capacity of paper mills.

At this juncture, specialists started looking for new materials for recording information. Thus came microfilm enabling storage of about 800 pages of information on a 100 ft. role of 35mm microfilm.

This promised not only great reduction of storage space requirement for library material but also of postal charges making the dissemination over long distances cheaper and quicker. Further, development of technology gave birth to microfiche with a capacity to store as many as 72 microimages on a sheet of 105mm x 148mm film.

Computers started making their presence felt in 1950s. In late 1950s,

it became quite clear that computers can be profitably used for very many library and information activities. The development of computer technology brought in its wake newer and newer data storage media like magnetic tape, magnetic drum, magnetic disk and so on. The latest arrival in the field is the optical disc technology, also known as laser disc technology or compact disc technology. The first gift of the technology was the optical videodisc in 1978, followed by compact audiodisc in 1982. The compact disc-read only memory (CD-ROM), the subject matter of the book under review, arrived in 1985 to bring about a revolution in the field of data storage. Let us try to understand the revolution CD-ROM brought about. In computerized storage media, the storage capacity is measured in terms of bytes. A byte is the measure of the space required to store a character or the space that intervenes two words. A double-sided double density (DSDD) magnetic disk (floppy) of 5.25 inch diameter and 48 TPI can store 3,62,000 bytes of data, whereas the user storage capacity of an optical disk of 5.25 inch diameter is 550,000,000 bytes (= 550 MB), and can easily store some 2,00,000 pages of word processor created text. As such, an optical disc is good enough to store the entire information contained in the 30 volumes of *New Encyclopaedia Britannica*. A librarian may note that the 30 volumes of the *Encyclopaedia* requires about 100 cms of shelf space, whereas the *Encyclopaedia* in CD-ROM requires only about half a centimeter. This is the revolution we are talking about.

Keeping this background in view, we may now navigate through the contents of the book, which is an anthology of a dozen articles contributed by experts drawn mostly from UK and USA. The book addressed itself to a number of issues that involve both publishers and librarians, and answers many of their queries.

The first chapter depicts the complete range of optical storage media that started appearing since 1970s and highlights the media that are likely to hit the market in the near future. The storage media discussed among others include video-discs, hybrid videodiscs, and compact discs. Among the compact discs, CD-ROMs have been described at greater length covering the stages involved in the production of CD-ROM databases, as well as hardware and software aspects. This apart, CD-Interactive, CD-Video, Optical Read-only Memory (OROM) and optical cards have also been described. The disadvantage with CD-ROM is that the user has the only option of reading it and not writing on it. To do away with the disadvantage, WORM (Write Once and Read Many times) discs, and Erasable/rewritable optical discs have appeared in the market. The chapter takes care of them as well.

Wide variety of CD-ROM products that appeared in the market within a short span of three years have been described in chapter 2. The products totalling 230 in 1988 include among others dictionaries, encyclopaedias, abstracting and indexing services, directories, databooks and statistical publications, patents, trademarks, maps, Bibles, book reviews, catalogues, and so on. Most of the products were, of course, targetted for libraries and information centres. However, there are already some products on finance and business, and their number is steadily growing. As regards the cost of the products, most of the library oriented products were priced between \$1000 to \$5000.

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Capters 3 to 7 are basically meant for CD-ROM publishers and deal with such topics as role of the system integrator in the generation of a CD-ROM product, investment needed for developing and marketing a CD-ROM product, user interface design of CD-ROM programs, technology and application of CD-interactive, and the role of European Commission in developing a European market for CD-ROM and other related products.

With the rapid growth of CD-ROM application, need has arisen for specialist services and softwares for transferring information on CD-ROM, and the providers of these services and softwares have been termed as system integrators. For turning out a CD-ROM product, a number of production stages are involved such as product design, preparation of source data file, loading, pre-mastering, mastering, replication, packaging, and labeling. The role of system integrator in all these cases has been identified and described (Chapter 3). Sometimes the services of a system integrator may also be requisitioned in developing the market for a CD-ROM product.

Before venturing a CD-ROM product, a publisher has not only to take into account the expenditure on various heads he has to incur, but also to anticipate the channels of earning. Chapter 4 dwells on these aspects. The items of expenditure identified for the job are development marketing, product support, sales, royalties and equipment. On the other hand, the income generation items are product license, hardware leasing and package. For each job various activities have been highlighted, actions for each activity, deliverable items, time scale, and resources required outlined and costs estimated. The chapter will be highly useful in providing the publishers an insight into the financial aspects of CD-ROM production and distribution.

Designing of user interface for a CD-ROM product assumes special importance as CD-ROM disc may

contain upto 550 megabytes of data. For retrieving any item of information from this incredibly huge amount of data with ease and practically without any loss of time, user interface has to be extraordinarily efficient. The paper (Chapter 5) dealing with user interface design takes care of userfriendliness, expandability and customisation, speed and natural language aspect of the software and outline the role of Hypertext, Guide, Hypercard and Hypertalk. The point has been illustrated further with the practical examples of *Microsoft Bookshelf*, the *KRS Interface*, and the *Plus Series databases*.

The announcement of the Compact Disc-Interactive (CD-I) was first made in the first Microsoft CD-ROM conference in Seattle in 1986 and its commercial availability was planned for 1988. The paper (Chapter 6) on the topic deals with the technology and applications as visualised in 1988.

The European Commission has been supporting a number of CD-ROM projects with European publishing concerns and information providers. To encourage standardization it has taken steps by way of sponsoring the initiative taken by private industry. The article (Chapter 7) also puts forth the chief motivations of the Commission of the European Communities (CEC) in this business, and highlights the experiences it gained, the success it achieved and its future plan for developing an internal market of CD-ROM goods and services in Europe.

The on-line services, from the very beginning have been supplying mostly references of documents and only in some cases abstracts of them. Rarely they were supplying full-text. In order to ensure the full-text supply of journal articles at a cost cheaper than photocopying cost, ADONIS project was conceived in 1979 (Chapter 8). Basing a survey of 1980, it started supplying the full-text of 219 high demand biomedical journals on CD-ROM. The chapter begins with the various surveys undertaken to determine the high

demand journals of the world that could be put on CD, and then moves on to various other aspects such as bit-mapped representation of information, early systems of data recording on discs, satellite transmission, limitations of disc copying, financial constraints, problems related to the inadequate capacity of CD-ROM discs compared to the need, and technical aspects of data recording, retrieval, as well as production of ADONIS discs. By 1988 twelve centres (7 in Europe, 2 in USA, one each in Mexico, Australia and Japan) were associated with the programme. The article also describes the work station, legal aspects, future products and services of the programme, and finally lists all the 219 journals being covered by ADONIS.

For availing the facility of on-line services, expenses are to be incurred for telecommunications, commissions for agents, database searches, and so on. Every time a database is searched, these expenses are to be borne. On the other hand, a database on CD-ROM, once procured can be searched infinite number of times practically without any additional cost, barring, of course, the cost of infrastructures. Here the CD-ROM databases have got a distinct advantage over the on-line databases. As such, the market potential of CD-ROM database is really great. The 9th chapter of the book deals with some of the financial principles and market considerations of CD-ROM publishing. The article shows how the STM (Science, Technology and Medicine) publishing market has been shifting from books to journals, and then from journals to journal articles over the years, and now possibly it is gravitating towards CD-ROM publishing. A comparison between book, microform and CD publishing has also been attempted considering all the costs. The experience of Grolier Inc. in transferring the *Academic American Encyclopaedia* from hard copy to online and then to CD-ROM has been put forth to show that the CD-ROM version may be a commercial success.

Pergamon Press is one of the largest publishing houses of the world, at present having 6000-odd book titles in print, and publishing about 400 international research and educational journals and serials. Pergamon stepped into the field of CD-ROM publishing to learn by experience the intricacies, to identify the problems and to assess the market response. The goals have been attained. The article 'Pergamon and CD-ROM: a case study' (Chapter 10) relates Pergamon's experience in this field specifically with two projects *CD-ROM Chemical Information Retrieval System* and, *International Encyclopaedia of Education*. The projects gave rise to a range of new issues and new decisions had to be taken to exploit the new technology. The experience is sure to benefit publishers, information managers and others in the information community trying to exploit the new technology.

CD-ROM, an exciting technological breakthrough in publishing world, has opened up wide vistas of exploration and experimentation. The article 'How and why should publishers use CD-ROM?' (Chapter 11) examines which publishers should take advantage of CD-ROM and how. The article enumerates the types of publication available on CD-ROM, points out advantages and disadvantages of CD-ROM as a medium, describes the CD-ROM publishing process, discusses storage and retrieval software, estimates the cost of CD-ROM production and concludes that CD-ROM is a viable publishing medium and reference books are the most suitable candidates for CD-ROM publishing.

The last article (Chapter 12) enumerates the sources of CD-ROM information covering major conferences, journals, market research reports, current awareness bulletins and organizations issuing brochures and press releases.

A well-prepared index appended to the book provides useful key to the contents of the book. The publication originally brought out by Butterworth has been reprinted for sale

in India by Aditya Books Pvt Ltd. The paper, printing, binding, and get-up are all fine.

National Information Centre on CD-ROM (NICDROM) has been established by NISSAT at Bangalore. Organisations like INSDOC, DESIDOC, NIC, NICDROM, and many others are getting a large number

of databases on CD-ROM. Moreover, CD-ROM has already started figuring in library and information science as well as computer courses being run by various universities and institutes in India. Considering all these facts, it can be expected that the book will find a good market in India.



STRUCTURAL ENGINEERING RESEARCH CENTRE GHAZIABAD

(Council of Scientific & Industrial Research)

Advertisement No.3/92

Applications are invited from Indian Nationals for the following posts in the Structural Engineering Research Centre, Ghaziabad which is a forward looking organisation well equipped for advanced research in Structural Engineering:

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NOTE (I): IN CASE CANDIDATES ARE NOT FOUND SUITABLE FOR HIGHER POSTS THEY CAN BE OFFERED LOWER POSITION.

NOTE (II): FOR THE POST OF WIND ENGINEERING AREA CANDIDATES HAVING RELEVANT QUALIFICATIONS IN AERO-SPACE ENGINEERING MAY ALSO APPLY.

GENERAL CONDITIONS: Applications in the prescribed format published in **Employment News** edition dated 09.01.93 alongwith a crossed postal order/Demand Draft for Rs.08/- drawn in favour of the Director SERC, payable at Ghaziabad (Candidates belonging to SC/ST category are exempted from the fee) should reach the **Administrative Officer, Structural Engineering Research Centre, Sector 19, Kamla Nehru Nagar, Post Bag No.10, Ghaziabad-201002** latest by 05.02.93. Candidates already in employment should submit their application through proper channel. Incomplete and applications received late will not be entertained in any case.

Mere fulfilling minimum qualification will not entail right for calling for interview/personal discussion. The applications will be screened by a committee. The decision of the competent authority will be final in this case.

Candidates to be called for interview will be paid single second class Railway/Bus fare by shortest route on through ticket basis on production of sufficient proofs.

The total number of vacancies may vary at the time of selection.

The appointment on the above posts will be on contract for a period of 6 (six) years which may be extended by the competent authority after review.

Canvassing in any form and/or bringing any influence political or otherwise will be treated as disqualification for the posts.

Interim enquiries will not be entertained.

davp 1177(4)92

Loss of Academic Environment

Prof. Indrajit Bhattacharya deserves congratulations for his article "The Loss of Academic Environment". (*University News* 23 November 1992).

For a teacher to raise the question "Are we teachers more sinning than sinned?" is the height of professional integrity. He has analysed dispassionately the present state of affairs in the field of education focusing his attention on the lack of motivation among the teachers. With little inclination to put in hard work – leave alone improving their knowledge level and teaching methodologies – the teaching profession has to bear the major share of responsibility for the dismal state of affairs in education.

It is strange that, while in all other professions, especially those in the manufacturing sector, definite targets are set and persons involved in that are expected to schedule their work to realise the targets and where failure to adhere to the required quality standards adversely affects their professional growth, we do not set either quantitative or qualitative targets for the teachers to work at.

The result is education right from primary to higher education, has become 'dry and drab' to the quote the author, in which both the teacher and the taught have one thing in common – both are not academically inclined. Apathy on the part of the students may be the natural outcome of the disinterested and indifferent attitude of the faculty.

The answer to the problems lies among other factors, in the security of tenure the teachers are guaranteed – a privilege even the top executives in private companies do not enjoy.

Teachers working in government and aided institutions constitute a privileged class, for the moment they enter service, they are covered by this 'safety net'.

While the system, under which tenure of service is guaranteed, has its plus points, its negative effects on the attitude and perception of the teachers cannot be overlooked. This takes away the need to put for one's best, since the quality and quantum of work turned out by the individual is not going to be the deciding factor in his getting monetary and positional advantages. An institution in which seniority is the sole criterion for going up the professional ladder, does not provide the climate congenial for work turn over of a high quality. In this atmosphere, where the question of survival of the best does not arise, where is the need to update one's knowledge in order to be a better teacher, where is the need to introduce to make classroom teaching meaningful, and where is the need for developing a sense of involvement and dedication.

In the prevailing unacademic environment, all talk about aiming at academic excellence becomes a mere platitude.

A contractual system in which a teacher is hired for a specific period, extension of which necessarily

depends on the qualitative content of his work performance, would help introduce a new work culture among the teachers which in turn will help raise the standard of education imparted. The need to prove one's intrinsic worth would act as a stimulant for better performance – all to the benefit of the students.

This system could initiate a lively, exhilarating educational process in which the motivated teachers play a dynamic role. the teacher then becomes the central force in the educational hemisphere. One should hasten to add that the contractual system has its own weak links but with well thought out safeguards, it could be a better alternative to the present system where nothing is expected of the well entrenched teachers.

(Ms.) K.G. Meenakshi,

Executive Trustee,

Padmabhushan Sri N. Ramaswami

Ayyar Educational Complex,

Tiruchirapalli-620002.

We Congratulate.....

Dr. S.S. Khanna who has taken over as Vice-Chancellor of the Narendra Deva University of Agriculture & Technology, Faizabad.

RESEARCH IN PROGRESS

A list of research scholars registered for doctoral degree in Indian Universities

SOCIAL SCIENCES

Social Anthropology

1. Chaturvedi, Satya Narayan. A study of the educational system with reference to SC and ST of Sagar District. HS Gour. Dr K Saini, Department of Anthropology, Dr Hari Singh Gour Vishwavidyalaya, Sagar.
2. Deolia, Govind Murari. Arakshan kee navin nitlyon ke Bhartiya samaj per prabhavon ka samajshastriya adhyayan. HS Gour. Dr Ramesh Choubey, Department of Anthropology, Dr Hari Singh Gour Vishwavidyalaya, Sagar and Dr Shrinath Sharma, Department of Sociology, Dr Hari Singh Gour Vishwavidyalaya, Sagar.
3. Issac, Samson. Prodh shiksha karyakram: Samasyayen evam sambhavnayen: Madhya Pradesh ke janjatiya kshetra ke vishesh sandarbh mein. HS Gour. Dr A N Sharma, Department of Anthropology, Dr Hari Singh Gour Vishwavidyalaya, Sagar.
4. Khan, Arshad. Kudervideva Janjati kee sanskritik prishtabhooni: Shiksha evam vikas kee dasa. HS Gour. Dr Ramesh Choubey, Department of Anthropology, Dr Hari Singh Gour Vishwavidyalaya, Sagar and Dr Shrinath Sharma, Department of Sociology, Dr Hari Singh Gour Vishwavidyalaya, Sagar.
5. Pandey, Shyam Sunder. A study of primary school dropouts in Rehli Tehsil of Sagar District, Madhya Pradesh. HS Gour. Dr Kalpana Saini, Department of Anthropology, Dr Hari Singh Gour Vishwavidyalaya, Sagar.
6. Pandey, Surya Kumar. The Gond of Mandla District: Their attitude towards family planning programme. HS Gour. Dr K Saini, Department of Anthropology, Dr Hari Singh Gour Vishwavidyalaya, Sagar.
7. Samanta, Debjani. An anthropological study of health seeking behaviour among the Gond of the Noradehi Wild Life Sanctuary Area in Madhya Pradesh, India. HS Gour. Dr K Saini, Department of Anthropology, Dr Hari Singh Gour Vishwavidyalaya, Sagar.
8. Yakub, Anisha Deepika. Women slum dwellers of Indore City: A socio-demographic study. HS Gour. Dr A N Sharma, Department of Anthropology, Dr Hari Singh Gour Vishwavidyalaya, Sagar.

Sociology

1. Kathal, Anita. Agarbatti shramikon kee samajik arthik sthiti ka samajshastriya adhyayan: Sagar Nagar ke vishesh sandarbh mein. HS Gour. Dr S N Sharma, Department of Sociology, Dr Hari Singh Gour Vishwavidyalaya, Sagar.
2. Mishra, Rajendra Kumar. Anusoochit janjatiyon kee swasthya evam rog rok kee pravrittiyon ka adhyayan: Chhindwara Jile kee anusoochit janjatiyon per adharit. HS Gour. Dr A P Singh, Department of Sociology, Dr Hari Singh Gour Vishwavidyalaya, Sagar.
3. Pandey, Ashok Kumar. Bal shramikon kee samajik arthik samasyayen: Ek samajshastriya adhyayan: Poorvi Uttar Pradesh ke Ballia Jile ke pariprekshya mein. HS Gour. Dr A P Singh, Department of Sociology, Dr Hari Singh Gour Vishwavidyalaya, Sagar.

4. Pandey, Mahesh Prasad. Bhartiya gramon per grameen vikas karyakramon ke prabhav ka ek samajshastriya adhyayan: Sagar Jile ke kuchch gramon per adharit. HS Gour. Dr A P Singh, Department of Sociology, Dr Hari Singh Gour Vishwavidyalaya, Sagar.
5. Rathi, Surendra Singh. Grmeen vidyutikaran ka samajshastriya adhyayan: Sagar Jile ke vishesh sandarbh mein. HS Gour. Dr Divakar Sharma, Department of Sociology, Dr Hari Singh Gour Vishwavidyalaya, Sagar.
6. Saxena, Sangita. Chhatrayon mein samajik parivartan: Ek samajshastriya adhyayan: Dr Hari Singh Gour Vishwavidyalaya kee chhatrayon per adharit. HS Gour. Dr A P Singh, Department of Sociology, Dr Hari Singh Gour Vishwavidyalaya, Sagar.
7. Sharma, Dharmendra. Mass media and opinion formation. HS Gour. Dr N K Gourha, Department of Sociology, Dr Hari Singh Gour Vishwavidyalaya, Sagar.
8. Shrivastava, Abha. Shikshit berojgar yuvaon kee samajik, arthik sthiti ka vishleshan: Sagar Nagar ke sandarbh mein. HS Gour. Dr Diwakar Sharma, Department of Sociology, Dr Hari Singh Gour Vishwavidyalaya, Sagar.
9. Shukla, Umesh Prasad. Jansankhya niyantran mein parivar niyojan kee bhumika. HS Gour. Dr A P Singh, Department of Sociology, Dr Hari Singh Gour Vishwavidyalaya, Sagar.
10. Singhai, Deepak. Bal shramik shoshan ek samajik samasya: Sagar Nagar ke agarbatti bal shramikon ke sandarbh mein. HS Gour. Dr S N Sharma, Department of Sociology, Dr Hari Singh Gour Vishwavidyalaya, Sagar.
11. Upadhyaya, Neelotama. Socio economic conditions of middle school teachers: A sociological study in reference to middle school of Sagar City. HS Gour. Dr A P Singh, Department of Sociology, Dr Hari Singh Gour Vishwavidyalaya, Sagar.

Political Science

1. Jain, Ramola. Swami Dayanand Saraswati ka rajnaitik chintan. Vikram. Dr Gopal Krishan Sharma, Asstt Prof, Department of Political Science, Vikram University, Ujjain.
2. Saxena, Dharendra Kumar. Bharatiya Sansad mein avishwas prastav kee niyantrankari bhumika, 1952 se 1992 tak. Vikram. Dr V K Sharma, Prof, Department of Political Science, Govt Madhav College, Ujjain.
3. Saxena, Rajeev Kumar. The concept and system of justice in political philosophy. Vikram. Dr Mahesh Maheshwari, Asstt Prof Department of Political Sciences, Vikram University, Ujjain.

Economics

1. Neelambika, A S. Economic aspects of social security in Kerala. Kerala. Dr C Harichandran, Chief Social Service Division, State Planning Board, TRIDA Buildings, Thiruvananthapuram.
2. Suseela, S. A study of interdistrict differences in the industrial development of Kerala State. Kerala. Dr R Ramachandran Nair, Director, Academic Staff College, University of Kerala, Kariavattom.

Public Administration

1. Pailwal, Arun Kumar. Dr Hari Singh Gour Vishwavidyalaya, Sagar, M P ke prashasnik vibhagon ka sangathanatmak evam

prabandhatmak vishleshan. HS Gour, Dr S B Shrivastava, Department of Political Science and Public Administration, Dr Hari Singh Gour Vishwavidyalaya, Sagar.

Education

1. Bhojia, Gajanand. A study of academic achievement in relation to intelligence, personality and socio-economic status of 10+1 students of Rajasthan. Panjab. Dr P S Sidhu, Lecturer, D A V College of Education, Abohar.

2. Dewan, Sonia. A comparative study of academic achievement, family environment, classroom environment, achievement motivation and intelligence of senior secondary students of different socio-economic groups. Panjab. Dr (Mrs) Asha Sethi, Department of Education, Panjab University, Chandigarh.

3. Gupta, Sushma. A study of the effects of teaching through various information processing models on learning of concepts in science in relation to self-concept, cognitive style and achievement motivation. Panjab. Dr (Miss) Vinit Khera, Department of Education, Panjab University, Chandigarh and Dr Sunil Dutt, Lecturer, Sohanlal D A V College of Education, Ambala City.

4. Parshotam Dass. A study of teacher effectiveness in relation to intelligence, emotional maturity, self-concept and attitude towards teaching profession. Panjab. Dr P S Sidhu, Lecturer, D A V College of Education, Abohar.

5. Rai, Nirdosh. A study of anxiety, self-concept and locus of control in relation to creativity. Panjab. Dr (Mrs) Asha Gupta, Department of Education, Panjab University, Chandigarh.

6. Raminder Singh. Self concept of hostlers and non-hostlers in relation to intelligence, creativity, personality and adjustment. Panjab. Dr S C Gakhar, D A V College of Education, Abohar.

7. Saroj Kumari. A study of the acquisition of geographical concepts in relation to intelligence, personality, cognitive styles and socio-demographic variables. Panjab. Dr G S Sodhi, Department of Education, Panjab University, Chandigarh and Dr S C Gakhar, D A V College of Education, Abohar.

8. Sharma, Himani. Vocational identity of the students at the senior secondary stage in relation to ego-identity, personality needs, parental identification and family socio-economic status. Panjab. Dr (Mrs) Pushpa Chaudhary, Department of Education, Panjab University, Chandigarh.

9. Toor, Daljit Singh. Physical, physiological and anthropometric determinants of performance in male intercollege level sprinters, jumpers and throwers. Panjab. Prof (Miss) J Bhullar, Department of Physical Education, Panjab University, Chandigarh.

Commerce

1. Agrawal, Ajay Kumar. Sarvajanic upakramon ke prabandh mein shramikon ke bhagidari: BHEL Bhopal tatha Bhilai Ispat Sanyantra, Bhilai ka tulnatmak adhyayan. HS Gour. Prof R K Bharti, Department of Commerce, Dr Hari Singh Gour Vishwavidyalaya, Sagar.

2. Choudhary, Varsha. Madhya vargiya parivarik budget per mulyavridhi ka prabhav: Hoshangabad Jile ka sarvekshan. HS Gour. Dr S B Awasthi, Department of Commerce, Dr Hari Singh Gour Vishwavidyalaya, Sagar.

3. Jain, Manish R K. Madhya Pradesh ke sehkar chini milon ke vittiya prabandh ka alochnatmak mulyankan. HS Gour. Dr A C Jain, Asstt Prof, Govt Arts and Commerce College, Sagar.

4. Jain, Mukesh Kumar. Jabalpur Sambhag mein grameen rojgar karyakramon ka kriyanvan: Ek alochantmak mulyankan. HS Gour. Prof R K Bharti, Department of Commerce, Dr Hari Singh Gour Vishwavidyalaya, Sagar.

5. Verma, Rakesh Kumar. Madhya Pradesh mein nagad faslon kee utpadan pravritti ka vishleshnatmak adhyayan. HS Gour. Dr J K Jain.

HUMANITIES

Fine Arts

Theatre

1. Malik, Kanwal Deep. Stanislavsky Method: A critical evaluation of his theory of acting and direction and its application in contemporary theatre practice. Panjab. Shri G Kumara Varma, Reader, Department of Indian Theatre, Panjab University, Chandigarh.

Language & Literature

Sanskrit

1. Choubey, Kamlesh Kumar. Mahabhashyasya prathamadhyaye prathampadsthasutreshupradeepoddyotyostulnatmak vimarsh. BHU. Dr B Amalshastri, Lecturer, Department of Vyakaran, Banaras Hindu University, Varanasi.

2. Dubey, Vijay Narayan. Anargharaghav-Prasanraghvat-kyoh stulnatmakamdhayanam. BHU. Dr Upendra Pandey, Department of Sahitya, Banaras Hindu University, Varanasi.

3. Mishra, Madan Kumar. Vyakarana siddhant laghuman-jushayasita-ngrthanirupan vimarsh. BHU. Dr Ramesh Chandra Panda, Department of Vyakaran, Banaras Hindu University, Varanasi.

4. Mishra, Ratna Prabha. Kadambri mein sabhi patron kee sameeksha. BHU. Dr K Pandey, Department of Sahitya, Banaras Hindu University, Varanasi.

5. Pandey, Sadan Kumar. Madhyandineeyasamhita mein chandon kee sameeksha. BHU. Dr Kaliash Chandra Dave, Department of Vedas, Banaras Hindu University, Varanasi.

6. Pandey, Vijay Kumar. Ganeshdevgyasya jyotish shastre yogadan sameekshanam. BHU. Dr Shrinivas Tiwari, Department of Jyotish, Banaras Hindu University, Varanasi.

7. Tiwari, Anil Kumar. Leelavatyah samkeeshatmakamdhayanam. BHU. Dr Chanderna Pandey, Department of Jyotish, Banaras Hindu University, Varanasi.

8. Tiwari, Ganesh. Shadlingprakarne prodhmanorama shabdendushekhara yostulnatmakadhyayanam. BHU. Dr B Amalshastri, Department of Vyakaran, Banaras Hindu University, Varanasi.

Hindi

1. Namdev, Gajendra Singh. Kedarnath Aggarwal kee kavita mein saundarya bodh ka swaroop. HS Gour. Dr Virendra Mohan, Department of Hindi, Dr Hari Singh Gour Vishwavidyalaya, Sagar.

2. Shukla, Mahesh Prasad. Nagarjun kee kavita mein saundarya bodh ka swaroop. HS Gour. Dr Virendra Mohan, Department of Hindi, Dr Hari Singh Gour Vishwavidyalaya, Sagar.

THESES OF THE MONTH

A list of doctoral degrees accepted by Indian Universities

SOCIAL SCIENCES

Library & Information Science

1. Durvasa Babu, Akumalla. **Information generation and library use by the university teachers: A case study of Sri Venkateswara University.** Andhra.

2. Padhi, Pitambar. **Development of reference tools in Oriya from 19th century A D: A technical study.** Utkal.

3. Sharma, Brij Kishore. **Role of university libraries in U P in the context of new education policy: A study with a particular reference to formulating new standards.** Jiwaji. Dr S M Tripathi, Prof and Head, Department of Library and Information Science, Jiwaji University, Gwalior.

4. Venkata Ramana, Vasamsetti. **Pattern and development of university libraries in Andhra Pradesh.** Andhra.

Psychology

1. Dhir, Poonam. **Managerial effectiveness in relation to personality motivation, organisational commitment and quality of working life.** Panjab.

2. Kumaraswamy, N. **An investigation into the psychological problems of college students and suggesting possible remedies and preventive measures.** Mysore. Dr J Bharath Raj, Prof and Head, Department of Clinical Psychology, All India Institute of Speech and Hearing, Mysore.

3. Madhok, Aneeta. **Motivational patterns and leadership styles of managers and subordinate interpersonal perceptions.** Panjab.

4. Mohammad Amin. **Study of over-under achievement of different levels of intelligence in relation to academic stimulation and personality variable.** Jamia. Dr M G Husain, Reader, Department of Psychology, Jamia Millia Islamia, New Delhi.

5. Sahay, Nalini. **Social sociological correlates of prospective patients and patients of Ischaemic heart diseases.** Jamia.

Dr M G Husain, Reader, Department of Psychology, Jamia Millia Islamia, New Delhi and Dr R R Kashiwal, Escorts Heart Institute and Research Centre, New Delhi.

6. Sinha, Indu Kumari. **Intellectual and non-intellectual correlates to creativity.** Magadh.

7. Thakur, Meenaxi. **Sex role orientation, locus of control, risk taking tendency and values as related to achievement motivation in tribal and non-tribal students.** HP.

8. Tripathi, Shyam Pati. **Changing attitude and status of scheduled caste: A study of Chamars of Varanasi.** Magadh.

9. Vedakekottaram, Sebastian. **Psychological assessment of hypertensives and evaluation of therapeutic intervention.** Nagpur. Dr N R Mrinal, Department of Psychology, Nagpur University, Nagpur.

Sociology

1. Baidya, K N. **A sociological study of social forestry in the context of scheduled caste/scheduled tribe in Hyderabad, Karnataka Region.** Gulbarga. Dr L S Ainapur, Prof and Chairman, Department of Sociology, Gulbarga University, Gulbarga.

2. Batra, Jagdeep Kaur. **Factors of divorce and problem of subsequent adjustment: A sociological study.** Panjab.

3. Khanna, Rita. **Rural society, agricultural mechanization and social change: A study of District Morena in Madhya Pradesh.** Jiwaji. Dr (Smt) Usha Govila, Principal, Government Naveen Girls College, Gwalior.

4. Kushwah, Archana. **Gwalior Sambhag ke grameen netritva ka samajshastriya adhyayan.** Jiwaji. Dr R S Bhadoria, Prof, Department of Sociology, Government Postgraduate College, Shivpuri.

5. Ramesh, Mande. **Area planning for integrated rural development: A case study.** Andhra.

6. Sharma, Praveen. **Sagar Nagar ke kamkazi mahilayon ke samajik sthiti.** HS Gour. Dr Shri Nath Sharma, Lecturer, Department of Sociology, Dr Hari Singh Gour Vishwavidyalaya, Sagar.

7. Thakur, Sonia. **A sociological study of the people of Malana in Himachal Pradesh.** Panjab.

8. Thakur, Vasudha. **Pandharpurchi wari: Ek samajshastriya abhyas.** SNTD. Dr Y B Damle.

Social Anthropology

1. Krishna Rao, M V. **Social development and maladjustment: A case study in the tribal areas of Andhra Pradesh.** Calcutta.

Social Work

1. Krishna Reddy, N. **A comparative study to understand the efficacy of family intervention programmes in head injury cases.** Bangalore. Dr R S Bhatti, Addl Prof, Department of Psychiatric Social Work, National Institute of Mental Health and Neuro Sciences, Bangalore and Dr B S Das, Prof and Head, Department of Neurosurgery, National Institute of Mental Health and Neuro Sciences, Bangalore.

Political Science

1. Arya, Sushila. **Bharat mein Vyavasthapika ka badalta swarup.** Devi Ahilya. Dr S S Bagga, Department of Political Science, Government College of Arts and Commerce, Indore.

2. Daya, Anita. **Dr Ram Manohar Lohiya aur unka Bhartiya samajvadi chintan: Ek adhyayan.** Vikram. Dr Mahesh Maheshwari, Asstt Prof, Department of Political Science, Vikram University, Ujjain.

3. Dubey, Shrikant. **Bhartiya Sangh mein antrarajiya sambandhon ka alochnatmak adhyayan: Panjab, Haryana ke vishesh sandarbh mein, 1966-1989 tak.** Ravishankar. Dr B N Shukla, Department of Political Science, Government D B D K College, Balodabazar.

4. Fulzele, Tukaram Ukandao. **The new international economic order (NIEO): A study of problems, issues and prospects.** JNU. Prof A K Ray, Centre for Political Studies, Jawaharlal Nehru University, New Delhi.

5. Jagrit, Nagratna. **Adivasi Vikas Khand: Parshasan aur rajniti: Rajnandgaon Jile ke adivasi vikas khandon ka ek adhyayan.** Ravishankar. Dr Kishore R Deshmukh, Department of Political Science, Durga College, Raipur.

6. Jain, Ashma. **Pandit Jawaharlal Nehru ke asanagnata niti aur uska vishwa shanti per prabhav.** HS Gour. Dr (Smt) Shanti Shrivastava, Girls Degree College, Sagar.

7. Majumdar, Munmun. *Indonesia and Australia: A comparative study of their foreign policies in South East Asia*. JNU. Prof Parimal Kumar Das, Centre for South Central South-East Asian and South-West Pacific Studies, Jawaharlal Nehru University, New Delhi.

8. Mathias, Edward. *A study of the 1978 Constitution of the Union Republic of the USSR*. JNU. Prof Zafar Imam, Centre for Soviet and East European Studies, Jawaharlal Nehru University, New Delhi.

9. Mohamed Abdulla Osman Khalifa. *Cuba and the Superpowers in Africa: A study of their policies with particular reference to Angola and Ethiopia, 1974-1988*. Delhi.

10. Mohanty, Dushmantha Kumar. *Student politics in Rourkela*. Sambalpur. Dr S C Hazary, Reader, Department of Political Science, Utkal University, Bhubaneswar.

11. Naquatee, Zeenat. *United States-Pakistan-China relations and their implications for India's security, 1971-81*. JNU. Prof M L Sondhi, Centre for International Politics, Organization and Disarmament, Jawaharlal Nehru University, New Delhi.

12. Nayak, Neelam. *Pandit Deendayal Upadhyaya ke rajnaitik vichar*. HS Gour. Dr (Smt) Shobha Shankar, Lecturer, Department of Political Science, Dr Hari Singh Gour Vishwavidyalaya, Sagar.

13. Nayak, Ranjit Kumar. *A study of the poverty eradication programmes with special reference to the Integrated Rural Development Programme in the Kuchinda Block*. Sambalpur. Prof S Nanda, Department of Political Science, Sambalpur University, Jyoti Vihar, Burla.

14. Padmavati Kumari, Rallabhandi Anuradha. *Political awareness of the scheduled castes of Visakhapatnam City on the basis of their socio-economic status*. Andhra.

15. Pandey, Sarita. *Bharata ke rashtriya rajniti mein kshetriya dalon ke bhumika aur prabhav, 1967 se 1986 tak*. Ravishankar. Dr B N Shukla, Department of Political Science, Government D B D K College, Balodabazar.

16. Samaddar, Ranabir. *Automation in newspaper industry: An enquiry into the economic, politics and the age of electronics*. Calcutta.

17. Sarvestani, Esmail Sahfice. *Iran and the regional cooperation for development*. Panjab.

18. Sathi Reddy, P. *Indo-US relations, 1975-85*. Osmania.

19. Sharma, Brijesh Kumar. *Role of police in welfare activities of state with special reference to Madhya Pradesh*. Jiwaji. Dr L D Gupta, Prof and Head, Department of Political Science, Government Postgraduate College, Shivpuri.

20. Singh, Deep Malvinder. *Indo-Nigerian economic relations, 1960-1985*. Delhi.

21. Sinha, Abhay Kumar. *The Kashmir factor in Indo-USA relations, 1947-64*. Magadh.

22. Sujata Kaur. *Indira Gandhi yug mein Bhartiya videsh niti ke naye ayam: China, Pakistan, Sri Lanka evam Bangladesh ke vishesh sandarbh mein*. Ghasidas. Dr D P Shukla, Vinoba Nagar, Bilaspur.

23. Taati, Aram. *Human rights and social status for women in Iran: Problems and prospects*. Jamia. Prof Ali Ashraf, Former Head, Department of Political Science, Jamia Millia Islamia, New Delhi.

Economics

1. Berad, Ramesh Rajaramji. *Economics of primary education in Nashik District, 1969-70 to 1989-90*. Nagpur. Dr R Y Mahore, Department of Economics, Nagpur University, Nagpur.

2. Bhagyalaxmi, M. *India's trade with European Common Market, 1970-80*. Kakatiya. Dr (Mrs) N Vijaya, Department of Economics, Kakatiya University, Warangal.

3. Bhujanga Rao, C. *An analysis of some aspects of credit controls in India with special reference to agricultural commodity prices*. Delhi.

4. Dubey, Girish Mohan. *Shahari kshetra mein parivarik bachat vyavahar: Sagar Shahar ke vishesh sandarbh mein*. HS Gour. Dr M L Tripathi, Department of Economics, Dr Hari Singh Gour Vishwavidyalaya, Sagar.

5. Hari Prakash, Pujari. *Economics of inland fish culture: A case study of West Godavari District*. Andhra.

6. Khan, Mansoor. *Ujjain Sambhag ke audyogik shramikon ke Karamchhari Rajya Beema Yojna: Ek adhyayan*. Vikram. Dr M D Khatri, Prof, Department of Commerce, Madhav College, Ujjain.

7. Krishna Murthy, Gurugundi. *Growth and performance of urban cooperative banks in India, 1967-68 and 1978-88*. Andhra.

8. Malik, Ravinder Paul Singh. *Optimum factor combination in agriculture: A programming model of an agricultural district*. Delhi.

9. Meetei, K Ibomcha. *A study of khadi arid village industries in Manipur*. Manipur. Dr N Mohendro Singh, Assoc Prof, Department of Economics, Manipur University, Imphal.

10. Nagaihte, L Chinzakham. *Agrarian system of the Zomi*. Manipur. Dr N Mohendro Singh, Assoc Prof, Department of Economics, Manipur University, Imphal.

11. Pawaiya, Daulat Ram. *Chambal Sambhag ke krishi vikas mein Chambal ayakat vikas pariyojana ka yogdan*. Jiwaji. Dr U C Tiwari, Department of Economics, Government S L P College, Morar, Gwalior.

12. Phadke, Ulhas Marotrao. *Economics of inland fishery in Nagpur Division since 1960*. Nagpur. Prof S V Khandelwale, Department of Economics, Nagpur University, Nagpur.

13. Prabhakar, Albert Gudapati. *Input-output relations and optimum cropping pattern in irrigated agriculture: A case study of Krishna Delta Region, Andhra Pradesh*. Andhra.

14. Ram Reddy, M. *Agrarian relations: A case study in Telangana Region*. Kakatiya. Dr K Venkat Narayan, Department of Economics, Kakatiya University, Warangal.

15. Sandhu, Mangal Singh. *Marketing of pesticides in Panjab*. PAU.

16. Shah, B R. *Urban informal sector in Saurashtra*. Saurashtra. Dr V H Joshi, Prof, Department of Economics, Saurashtra University, Rajkot.

17. Shrestha, Pushpa. *Educated females in Nepal: Factors influencing their participation in economic activities*. JNU. Prof M K Premi, Centre for the Study of Regional Development, Jawaharlal Nehru University, New Delhi.

18. Sudhakara Reddy, S. *Effects of agricultural growth on labour force participation, unemployment and poverty: The case of rural Andhra Pradesh*. Andhra.

Public Administration

1. Venkata Rao, MR. *Development profile of an Indian village: A case study*. Osmania.

Education

1. Diwan, Rasidaben Motisha. *A study of social maturity of higher secondary school students of Gujarat in the context of some psycho-socio correlates*. Patel. Prof I A Vora.

2. Farajollahi, Mehran. *Problems of primary education as perceived by parents of primary school children in Kerman State of Iran*. Panjab.

3. Ghai, Guru Datt. *A crosssectional study of selected physiological variables and their relationship with motor performance components of boys, ten through seventeen years of age*. Jiwaji. Dr B S Brar, Reader, Laxmibai National College of Physical Education, Gwalior.

4. Meena Kumari. *An evaluative study of the teachers of Mathematics in elementary and secondary schools in Panjab with special reference to its objectives*. Panjab.

5. Mohamed Iqbal Ahmed. *A study of the influence of parental value orientations, teacher leader behaviour and students mental health on the creativity of IX standard students of the same socio-economic status*. Bangalore. Dr M Khajapeer, Chairman, Department of Education, Bangalore University, Bangalore.

6. Mohan, Shashi. *A study of the roles of aptitude, attitude and motivation in English acquisition*. Delhi.

7. Shah, Milankumar Bhanuprasad. *An investigation into the effect of self concept enhancing programme on the achievement motivation, defensiveness and the anxiety of primary school children*. Patel. Dr K M Shah.

8. Upadhyay, Chitrangad. *A critical study into possibility of implementation of environmental education as an effective remedial measure for the problem of pollution with special refer-*

ence to M P. Vikram. Dr B K Dixit, Government College of Education, Ujjain.

Commerce

1. Govind Bhat, S. Manpower management in commercial banks: A case study of public sector banks. Mysore. Dr C M Muniramappa, No 239-Kalyani, 8th Cross III Stage, Gokulam, Mysore.

2. Gupta, Kiran Kumar. Financing of agriculture by commercial banks in Bihar: A case study of Patna District. Magadh.

3. Jain, Amir Chand. Laghu sinchal yojanayon ka lagat labh vishleshan: Sinchal Vibhag Rajnandgaon. Ravishankar. Dr P Devdas, Prof and Head, Department of Commerce, Government Digvijay College, Rajnandgaon.

4. Jayamani, C V. A study of management practices in Kerala State Road Transport Corporation. Calicut. Dr T Govindan Kutty Nair, Reader, Department of Commerce, University of Calicut, Calicut.

5. Khan, Arifuzzaman. A critical appraisal of India's trade with the U K. Jamia. Prof Mohd Saeed, Department of Commerce, Jamia Millia Islamia, New Delhi.

6. Nandrajog, Minoo. Working capital management in the public sector in India with particular reference to sick units. Jamia. Prof Mohd Saeed, Department of Commerce, Jamia Millia Islamia, New Delhi.

7. Roy, Suraj Narayan. The role of Bihar State Credit and Investment Corporation Ltd in industrial development of Bihar. Magadh.

8. Sharma, Chandra Kant. Role of consumer organisations in consumer protection. HP.

9. Shrivastava, Manoj Kumar. Madhya Pradesh mein rajkiya upkaramon mein vittiya prabandha. HS Gour. Prof R K Bharti, Head, Department of Commerce, Dr Hari Singh Gour Vishwavidyalaya, Sagar.

10. Tiwari, S C. Madhya Pradesh ke Chattisgarh kshetra mein shrmashakti sahabhagita ka vishleshan. Ghasidas. Dr H N Guru, Government N E S College, Jashpurnagar.

11. Venkateswara Rao, T. Working of DICs in A P: Study of selected DICs. Osmania.

Home Science

1. Hazarika, Daisy. Employed women's traditional and modern home making responsibilities in association with physical facilities attitudes and problems and inferences for Home Science curriculum. Baroda.

2. Jain, Ashima. Processing of pearl millet for its more effective utilization. HAU.

3. Kakker, Sunita. Bioavailability of minerals in chickpea: Effect of domestic processing and level of the antinutrients. HAU.

4. Neerja Rani. Absorption of B Carotene from common Punjabi diets. PAU.

Management

1. Krishna Kumar, T. Entrepreneurship in small industry: A study of Mahaboobnagar District. Osmania.

2. Pal, Debasish. Growth and viability of informal business: A case-study on Railway peddling. Calcutta.

3. Ray, Manindranath. A study of workers' participation in management with particular reference to India. Calcutta.

4. Vijayalaxmi, M. Strategies for marketing of financial services with special reference to SBH. Osmania.

5. Vyas, Ramkrishna. Profitability of commercial banks in India: A comparative study of public sector banks, private sector banks and foreign banks operating in India. Devi Ahilya. Dr R D Agarwal, Director, Development Council, Devi Ahilya Vishwavidyalaya, Indore.

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For more details, please refer to CSIO Advt No. 5/92 appeared in The Employment News dated 9.1.1993.

Last date for receipt of complete application is 26.2.1993.

INTERIM ENQUIRIES WILL NOT BE ATTENDED TO.

EDUCATION NEWS INDEX

A list of select articles and editorials on education from newspapers received in the AIU Library during December 1992.

EDUCATIONAL PHILOSOPHY

Sondhi, Madhuri. The quest for values. *The Hindu* 15.12.92.

EDUCATIONAL PSYCHOLOGY

Char, Sriyaya. Why not alternative schools? *The Hindu* 29.12.92.

Chopra, Indira. Bringing up baby. *The Hindu* 19.12.92.

Kanwaldeep Singh. IQ tests not that decisive. *Indian Express* 25.12.92.

NO SCHOOL on Saturday, what'll we do instead? (Editorial). *The Statesman* 19.12.92.

Talwar, Ramola Thomas and others. Slaving for a better future. *Indian Express* 27.12.92.

EDUCATIONAL SOCIOLOGY

Bal Krishna. Mandal verdict: Ensuring efficiency not affected. *The Hindustan Times* 28.12.92.

Bhagat, B R. Reservation: Cobweb cleared. *The Hindustan Times* 18.12.92.

Bhatia, B M. Back to Mandal. *The Hindustan Times* 3.12.92.

BLOT ON Jamia's reputation (Editorial). *The Pioneer* 5.12.92.

BLOW FOR intolerance (Editorial). *The Hindustan Times* 7.12.92.

Jha, Alok K. Mandal: No fire, no fury. *The Pioneer* 13.12.92.

King, Omar Luther. The question of reservation. *The Assam Tribune* 15.12.92.

LAWLESSNESS AT Jamia. *National Herald* 7.12.92.

Mathur, V S. Youth needs planned training. *The Assam Tribune* 24.12.92.

Nayar, Kuldeep. A process, not an event. *The Tribune* 2.12.92.

PROF HASAN'S "Sins" (Editorial). *The Tribune* 7.12.92.

PUNISH THE guilty (Editorial). *Indian Express* 7.12.92.

SATANIC ATTACK (Editorial). *Free Press Journal* 7.12.92.

Shourie, Arun. Does the judgement cohere? *Deccan Chronicle* 6.12.92.

EDUCATIONAL POLICY & PLANNING

Ambirajan, S. Knowing matters. *The Economic Times* 25.12.92.

Amrik Singh. Revamping education: Pioneering work by West Bengal Commission. *Indian Express* 7.12.92.

Banerjee, Benodini S. Modernization channel to better education. *Indian Express* 17.12.92.

Prahalada, N N. Schooling in a complex experiment. *Deccan Herald* 18.12.92.

TONING UP higher education (Editorial). *The Hindu* 9.12.92.

EDUCATIONAL ADMINISTRATION

Amrik Singh. Why Hindi university? *Deccan Herald* 11.12.92.

Baliga, B M. Autonomous colleges pose challenge and opportunity. *Deccan Herald* 26.12.92.

Das Gupta, S. UGC vs universities. *The Assam Tribune* 19.12.92.

Varsities face money crunch. *Free Press Journal* 15.12.92.

Devy, G N. Excess powers for V-Cs detrimental. *The Times of India* 11.12.92.

Nirmal, C J. If education is to be life-giving... *The Hindu* 8.12.92.

QUESTION OF honour (Editorial). *The Statesman* 21.12.92.

Sharma, Jai Prakash. State of higher education in India. *Patriot* 23.12.92.

Seth, Selina. A brave new world. *The Pioneer* 27.12.92.

UP TO a degree (Editorial) *The Times of India* 3.12.92.

Usha, K R. Spare the rod, spare the child. *Deccan Herald* 11.12.92.

Vijendra Rao, P M. A tradition in peril. *Deccan Herald* 18.12.92.

WELCOME STEPS (Editorial). *Deccan Herald* 30.12.92.

EDUCATION & POLITICS

Engineer, Asghar Ali. Tampering with history: Hinduising textbooks will cause alienation. *Indian Express* 8.12.92.

Mishra, Girish. Communalisation of history textbooks. *Patriot* 6.12.92.

INNOVATIONS & REFORMS

Vinayak, M. Educational reforms in Bengal. *The Hindu* 14.12.92.

CURRICULUM

Joshi, P C. Media education: Native model needed. *The Hindustan Times* 10.12.92.

Kedar Shankar. Serve while you learn. *Deccan Herald* 4.12.92.

LANGUAGE & LANGUAGE POLICY

Anniah Gowda, H H. Let not languages divide. *Deccan Herald* 7.12.92.

Easwara Reddi, Agarala. Language policy needs review. *Deccan Chronicle* 2.12.92.

Peter, Francis. Rules of grammar follow no rhyme or reason. *The Hindu* 22.12.92.

SCIENCE EDUCATION

Celly, Ashok. Elitist attitudes, dogmas kill scientific spirit. *The Pioneer* 22.12.92.

VOCATIONAL EDUCATION

Dhillon, Jaspal. Software engineering: A career of the '90s. *The Pioneer* 10.12.92.

DISTANCE EDUCATION

Ghosal, S L. Farm research: Technology must suit actual needs. *The Statesman* 22.12.92.

Gupta, Subhra. The disjointed entrance. *The Statesman* 25.12.92.

Jain, G C. Demand for ayurvedic doctors in the rise. *The Pioneer* 31.12.92.

Joshi, Charu Lata. The great MBA rush. *The Times of India* 13.12.92.

Krishnamoorthy, B. Engineers, doctors and IAS. *Patriot* 2.12.92.

Rai, S C. Medical career is challenging as well as rewarding. *The Pioneer* 31.12.92.

Saxena, A C. Homeopathy today carries the sweet smell of success. *The Pioneer* 31.12.92.

Subhash, V K. Challenging, lucrative career. *The Pioneer* 10.12.92.

_____. Degree, diploma courses for girls. *The Pioneer* 17.12.92.

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Tewari, Ajay. Despite the state ban, there's still a demand for nurses. *The Pioneer* 17.12.92.

Tiwari, Vimal Yogi. From abacus to micro computer. *The Pioneer* 10.12.92.

TEACHERS & TEACHING

FOR THE pre-school child (Editorial). *The Hindu* 20.12.92.

Gupta, Jayati. Eng. Lit. blues: Indian teachers need to be pragmatic. *The Statesman* 20.12.92.

Lalit Kishore. Crucial role for the language teacher. *The Hindu* 29.12.92.

Raman, Usha. English for special purposes. *The Hindu* 22.12.92.

Sagar, Keshav. Teachers for tomorrow. *National Herald* 20.12.92.

LIBRARIES & BOOKS

Bahl, Sushil. Intellectual property matters: How best can intellectual property be protected. *The Times of India* 7.12.92.

Das, K C. The librarian's role. *The Hindu* 1.12.92.

Dinakar, S. Bad girls make good news. *The Economic Times* 27.12.92.

Mirza, Gulnar. Silverfish vs bookworms. *Deccan Herald* 18.12.92.

Mojumdar, Modhumita. Appreciating the value of books. *The Statesman* 6.12.92.

Paranjape, Makarand. Everyone seems to have novel ready for publication. *The Economic Times* 27.12.92.

Sastry, R S. Lest the future curse us. *Deccan Chronicle* 20.12.92.

Suroor, Hasan. Guess what they read on the way to yuppiedom. *The Hindu* 20.12.92.

TEXTBOOK MUDDLE (Editorial). *Deccan Herald* 12.12.92.

STUDENTS & STUDENT ACTIVITIES

Acharyya, Moutussi. Young Turks on campus. *The Telegraph* 7.12.92.

PHYSICAL EDUCATION & SPORTS

Bernard, N. The 'why and how' of physical fitness. *The Hindu* 15.12.92.

SPECIAL EDUCATION

Joshi, Uma. Disabling dependence. *Deccan Herald* 26.12.92.

Sridharan, Vijaya. To spot and nurture the gifted. *The Hindu* 15.12.92.

WOMEN'S STUDIES

Gupta, Y P. Female foetus: At the mercy of illiteracy. *The Statesman* 23.12.92.

Meiyue, Zhou. Women scientist make their mark in China. *The Economic Times* 20.12.92.

Summers, Lawrence H. Educating girls. *The Times of India* 2.12.92.

ADULT EDUCATION

Kapoor, Aditi. Official meddling setback to literacy. *The Times of India* 26.12.92.

ELEMENTARY & SECONDARY EDUCATION

CHILDREN'S NEEDS (Editorial). *Deccan Herald* 24.12.92.

ISSUES IN primary education (Editorial). *The Hindu* 3.12.92.

Rai, Usha. Pre-school education: A nightmare. *Indian Express* 23.12.92.

STOP TORTURING children (Editorial). *The Tribune* 21.12.92.

Weiner, Myron. Compulsory education can end child labour. *Weiner. The Pioneer* 22.12.92.

WHERE ARE the playgrounds (Editorial). *The Hindu* 23.12.92.

INSTITUTIONAL PROFILE

Mojumdar, Aunohita. Educating the distaff side: Lady Irwin College. *The Statesman* 13.12.92.

Padmanabhan, K A. A unique institution of its kind: Russian Academy of Sciences. *The Hindu* 22.12.92.

BIOGRAPHICAL PROFILE

Chetiya, Buddha Prasad. From the Vedas to the notebooks: S Ramanujan. *The Assam Tribune* 22.12.92.

Ghosh, Arup. A professorial V-C: Prof Y K Alagh. *The Hindustan Times* 21.12.92.

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No. of posts

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|---------------------------------|---|----|
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| 3. Soil Science & Ag. Chemistry | - | 1 |
| 4. Entomology | - | 3 |
| 5. Statistics & Mathematics | - | 2 |
| 6. Horticulture | - | 6 |
| 7. Agril. Economics | - | 1 |
| 8. Plant Pathology | - | 1 |
| 9. Extension | - | 1 |
| 10. Agril. Engineering | - | 3 |

TOTAL : 32 (SC-20 : ST-12)

FACULTY OF VETERINARY SCIENCE

- | | | |
|------------------------|---|---|
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| 2. Veterinary Medicine | - | 1 |
| 3. Pharmacology | - | 1 |
| 4. Research Officer | - | 1 |
- (Temporary likely to continue)

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For Asstt. Profs/Lecturers - Good academic record with at least 1st class or an equivalent grade at Master's degree level. 2 (two) years' experience of teaching and/or research.

For Assoc. Lecturers - B.E./or equivalent degree with one year's experience.

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Space Engg. & Rocketry - Aerodynamics/Rocket Propulsion/Rocket Propellant/Composite Materials/Space Engg.

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Computer Science - Computer hardware and Microprocessors, Softwares including DBMS, operating Systems.

Management - (Marketing/Finance)/Personnel/Organisational Behaviour/Industrial Management.

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J.B. Saxena
Registrar & OSD

Dated 15-12-92

INDIRA KALA SANGIT VISHWAVIDYALAYA, KHAIRAGARH (MP)

No. R/3657 Dated : January 2, 1993
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These posts carry CPF benefits and DA/ADA at University rates from time to time. Appointees will be on probation according to University rules. Retirement age 60 years. These posts are Reserved for Scheduled Castes and Scheduled Tribes but if SC/ST candidates are not available, the posts will be filled in by general categories. Prescribed application forms (in six copies) and other details may be obtained from the Registrar by sending self addressed stamped envelope of Rs. 10/- of 25x12 cms. Application fees Rs. 40/- for Registrar and Rs. 30/- for Deputy Registrar in the form of IPO. Application fee for the candidates of SC/ST will be one-fourth. Last date for receipt of prescribed filled up applications in six copies is **28th February, 1993**. No blank prescribed application forms will be sent/supplied after 15th February, 1993. No postal delay is acceptable.

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M.K. Gangajaliwale
REGISTRAR

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"ECONOMIC POLICIES, HUMAN RIGHTS AND THE LEGAL ORDER"

4-6 JUNE, 1993 AT BANGALORE

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University News

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MONDAY, FEBRUARY 1, 1993

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Madras Varsity Convocation



From L to R : Dr. P. Govindarajulu, Registrar, Dr. M.S. Swaminathan, Hony. Director, Centre for Research on Sustainable Agricultural and Rural Development, Madras, who delivered the convocation address, Shri Bhishma Narain Singh, Governor of Tamil Nadu and Chancellor, Dr. C. Aranganayagam, State Education Minister & Pro-Chancellor, and Prof. S. Sathikh,, Vice-Chancellor, University of Madras.

SHASTRI INDO-CANADIAN INSTITUTE

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It is imperative that applicants follow the detailed guidelines available from the Institute in both stages.

Please note that the deadlines given here are for receipt (not date of post-mark) of complete applications at the addresses given below.

IN CANADA

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Executive Director
Shastri Indo-Canadian Institute
2500 University Drive N.W.
Calgary, Alberta
Canada T2N 1N4

Tel : 403 - 220 - 7467

Fax : 403 - 289 - 0100

IN INDIA

Contact :

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Shastri Indo-Canadian Institute
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IN THIS ISSUE

Hindi and Urdu Universities	5
Teachers Perceptions : Administrators Challenge	6
Need for Crossbreeding in Indian Universities	10
Convocation	
University of Madras, Madras	13
Campus News	
80th Session of Indian Science Congress	16
Quality of Science and Technical Education	18
Biologists Heading for New Era	18
PG Courses in Public Health and Health Care Admn.	19
Agriculture	
Low Cost and Non-Hazardous Agrotechniques	20
Development of Cotton Cultivation in Punjab	21
Soil Management Technologies	22
Mapping Technovations in Post-Harvest Engg. & Technology	22
News from UGC	
Countrywide Classroom Programme	22
Classified Advertisements	28
Opinions expressed in the articles are those of the contributors and do not necessarily reflect the policies of the Association.	

Editor :
SUTINDER SINGH

Some Criteria for Excellence in Learning

J.N. Kapur*

Introduction

The present article is a companion to my two earlier articles viz. "Criteria for Excellence in Teaching" (*University News* 29, 51, 2-4, 1991) and "Criteria for Excellence in Research" (*University News* 28, 11, 3-7, 14, 1987), which were addressed to teachers and research scholars respectively. The present article is addressed directly to students in higher education and indirectly to teachers and parents who advise them.

A student has a right to know about the criteria for excellence in learning, on the day he enters college, so that he can always keep these in view and mould his life accordingly. Also at the end of his university career, he should be able to judge whether he has been a successful student in terms of these criteria.

Today he is usually given a single criterion for excellence and that is excellent performance in the university examinations and he concentrates his energies on achieving this goal. He is also aware of other criteria like 'preparing for life', 'preparing for a job' and 'enjoying college life', 'fighting for social justice', but these are relatively vague.

We give below some questions to which every student can give honest answers to himself and these answers should give a feedback to him to help him towards the goal of excellence in learning. For every question he can give himself marks from 0 to 100, depending on his own best judgment.

Some Questions for Self-Assessment as Regards Studies

1. *How much time do you devote on an average to academic studies per week?*

This includes time for attending classes, studying at home, studying in the library, discussion with teachers, etc. A good student should spend about 55 hours per week for 40 weeks in a year, i.e. a total of about 2200 hours per year in this work. Also regular work throughout the year is better than concentrated work near the examination days.

2. *Do you study all the topics in a course with equal attention or do you not give much attention to some topics because they are not important from examination point of view? Do you give up the study of some topics in each course because of the option usually available in examination papers?*

A good student studies all the topics with full attention irrespective of their importance from the examination point of view.

3. *When you study a topic in a course, do you prepare answers to some selected questions based on previous year's examination papers or do you prepare yourself for all possible questions on the topic?*

A good student studies every topic in depth and is ready to challenge the examiner to ask him any reasonable question from within the course.

*Jawahar Lal Nehru University and Mathematical Sciences Trust Society, C-766, New Friends Colony, New Delhi-110065.

4. *Do you depend on class-room notes and made-easy books only or do you read some standard text-book from cover to cover or do you read more than one text-book for one paper?*

A good student usually studies one standard text book thoroughly and he also goes carefully through other text books. He is in a position to say for every topic as to which text-book contains the best treatment of the topic and he says this on the basis of his own reading and judgement. He even makes his own notes by making best choice from the text-books, he studies.

Do you believe in committing facts to memory or do you insist on understanding every statement thoroughly and with all its implications?

A good student insists on clarity of understanding. If he does not understand something in the classroom, he tries to understand it from his text-book. Even then if he is not clear, he goes to other text-books in the library and hopefully he finds a text-book which clears his doubt. If he still fails, he discusses with his class-fellows and his teachers. A good student remains restless till everything is crystal clear to him and is prepared to think hard for becoming clear. He knows that remembering results which are well understood is relatively easy.

6. *Do you forget what you learn immediately after the examination or do you remember it for sometime more or do you remember it for a long time?*

Those who have really got deeply involved in the subject, will remember it for a long time, atleast they will be able to recall it at very short notice. Students have to know that they require what they study not only for passing examinations but also for studying more advanced portions of the subjects concerned, for appearing in interviews for jobs and scholarships for which they may appear and where all sorts of questions may be asked and for unforeseen situations in life.

7. *Have you learnt how to learn yourself? Can you think for yourself or do you depend on others to think for you?*

The student should learn how to use the library and other sources of information, to find out himself efficiently what he needs. He should not always depend on the teacher to tell him what books and journal articles to read, what reference and abstracting journals to consult, what computer data bases to refer to, etc. He should learn to swim in the ocean of knowledge and to collect pearls of wisdom on his own.

8. *Do you read only the text-books? Do you also read books on history, culture, excitement and relevance of your subject? Do you know why and how the various concepts in your subject were developed? Do you know of some exciting work going on the frontiers of your subject?*

Every subject, in fact every topic has an excitement, thrill and relevance of its own. A good student is thrilled by every piece of knowledge he acquires. He does not consider learning as a burden, but as a pleasure. He considers student life as a privilege in which he is given all free time to acquire as much knowledge as possible about great exciting things that are happening in all subjects and he does not want to waste even a minute of this time. He is excited by the knowledge that he acquires and not by the marks he gets. There are many expository books and journals in every subject which make the latest results in every field available at student level and good students read these, think about these, talk about these, discuss these and enjoy these.

9. *Do you write term-papers or project reports or do you undertake any undergraduate research on your own.*

In the internal assessment system, these are quite common, and creative energy of a student is revealed in the process. In the external examination system, these are not compulsory, but a good student can still choose a topic of his own choice and write an extended essay on it, by reading a number of books and journals. He may not get marks for it but he will get a feeling of achievement and fulfilment. A student in this process may also find new original results at his level and can begin to realise his research potential.

10. *Do you have some teachers whom you admire as scholars who are deeply interested in learning? Do you have some other authors, scientists, past and present for whose learning you have deep respect?*

In the west, they have the concept of a 'role model'. A student who has a life-long learner as a role model can expect to be a good student. If he can have more than one such role models so much the better for him. Sometimes the trouble with our students is that they make a wrong choice of role models.

11. *Have you any Academic Ambitions*

A student who develops an ambition to become a great scientist or a great engineer or a great medical researcher or a great economist or a great architect or a great literary person is likely to be a better student than another student who has no academic ambition.

12. *Do you feel happy or sad when a teacher does not turn up for his class or when there is a strike or an unscheduled holiday is declared? Do you use the time thus gained in studies or idle gossip?*

A student who feels happy obviously does not enjoy the lectures. Even if he finds that he does not benefit much from the lectures of some of his teachers, he should utilise his time in self-study.

Some Questions or Self-Assessment as Regards Character

1. *Do you believe in basic ethical and moral values like truth, honesty, integrity, fairness, justice, etc. or do you pay only lip sympathy to them? Are you prepared to violate these for the slightest advantage or only under extreme conditions or you are not prepared to violate these under any conditions?*

One of the objects of higher education is to build character. If a student requests his teacher to mark him present when he was really absent, if he is prepared to copy in the examinations or use other unfair means, if he requests that his parents speak to his examiners for doing him favours, if he is prepared to tear pages from library books, if he is prepared to deceive his fellow-students, teachers or parents, he can get only negative marks. He is deceiving himself. He may be getting a temporary advantage, but he is damaging himself permanently. If there is injustice to himself, a student feels hurt, but when he copies or gets marks increased or gets an undue favour, it is also injustice to others. A good student stands for truth, honesty and justice, without any exception. He must follow these values ruthlessly whatever be the cost, since even a small deviation can open the flood-gates for big deviations later on.

2. *Are you touched by the mass illiteracy, abject poverty uncleanliness and do you feel compassion for the suffering men and women?*

A good student must cultivate a feeling and loving heart. He may teach some illiterate persons, he may help in making some slums cleaner, he may bring some cheer to the sick, the disabled and the aged, but he must do these not for getting a certificate or for show, but because he gets joy by bringing more joy in the life of others.

3. *Do you feel so strongly for justice and fair play that when there is injustice you are prepared to indulge in violence and burn public property?*

If a student feels so strongly, then he should not tolerate any act of injustice even if it is in his own favour. He should not tolerate injustice to poor men who use buses which may be burnt or the poor men who may lose their daily wages because of the disturbances that are caused. He should fight for justice everywhere and not only in causes sponsored by vested political interests.

4. *Do you believe in non-violence as a policy or as a creed?*

If a student believes in non-violence, he should not hurt anybody's feelings. He should be kind and courteous to everybody.

5. *Do you believe in equality & fraternity and are you prepared to work for social and economic justice?*

A good student who believes that all efforts have to be made to minimise economic and social injustice in society, must himself treat all his class-fellows whether they come from scheduled castes or backward classes or poor families or rich families with equal respect or friendship. He respects scholarship and character and not money power or caste power or political power.

6. *Have you the courage to fight against social evils like the dowry system?*

A student must fight against superstitions and untested beliefs and must be completely rational in his outlook. He should not only not accept dowry in his own marriage, but persuade all his friends not to do so. At least he should refuse to attend marriages where dowry is given, he should not attend a feast where scheduled castes persons are not allowed to sit with others and he should not attend any function which shows discrimination in any manner on the basis of caste or religion or sex, etc.

Some Questions for Self-Assessment as Regards Sports and Physical Education

1. *Do you take physical exercise like jogging or yogasanas regularly?*

A good student should take physical exercise regularly to keep himself in good shape.

2. *Do you play some game like cricket or hockey or football in a regular way and do you want to excel in this game?*

A good student should choose atleast one game and try to do as well as possible in this game.

3. *When you play a game, do you play in the spirit of the game?*

A good student is friendly with all players. He tries his best to win, but if he loses, he loses with a smile and goodwill.

Some questions for Self-Assessment for Aesthetic and Culture Education

1. *Do you have any interest in culture and extra curricular activities.*

A good student takes part in the activities of some society of his college and learns to work as a member of the team working for excellence in some cultural area.

2. *Do you have any interest in painting, music, drama, sculpture or any other fine arts?*

A good student must have an appreciation for excellence in these areas and he must try to cultivate at least one of these.

3. *Are you a cultured person? Have you learnt the art of living with others?*

This is the most important art a student has to learn, namely, the art of living in harmony, in cooperation, with fellow-feeling, with mutual courtesy, with mutual help, with all his fellow students, teachers and all other people, he comes in contact with.

Some Questions for Self-Assessment as Regards Moral and Spiritual Education

1. *Have you read some great books on religion, say the Gita, Qoran, Bible or Granth Sahib and have tried to understand all the great teachings that it gives.*

A good student not only follows rituals of his religion, but tries to understand its great teaching and follow them. He also wants to understand the great teachings of other religions and his respect for religions arises out of his understanding of the commonality of their teachings.

2. *Have you read and thought over and assembled some of the inspiring thoughts of Buddha, Mahavira, Socrates, Plato, Gandhi, Aurobindo, Tagore, Vivekananda and others?*

These thoughts can guide the students throughout their lives.

3. *Have you developed a philosophy of life? Are you clear about your goal? Have you identified a great cause which you would like to serve?*

A student must strongly strive to understand life and to determine a goal for himself. If he identifies himself with a great cause, the great cause will help him in determining the course of his life.

Integrated View of Education

Learning means receiving education and integrated education includes mental, intellectual, physical, moral, ethical, aesthetic and spiritual education. It includes building of character. A student can attain excellence in education if he uses every minute of his college life to build himself intellectually, physically and emotionally, aesthetically, morally and spiritually.

These questions are meant to help the students in self-introspection. A good student must have a goal and must stand, arise and stop not till his goal is reached.

PUNJAB AGRICULTURAL UNIVERSITY, LUDHIANA

MASTER OF BUSINESS ADMINISTRATION

Applications are invited for admission to Master of Business Administration programme for the academic year 1993-94.

ELIGIBILITY : "Graduate/Postgraduate in Science/Engineering, Agriculture, Agricultural Engineering, Technology, Veterinary and Home Science with at least 60% marks of DGPA 2.74 (4.00) basis (55% marks or 2.42 (4.00) basis for SC & ST) at graduation level."

Candidates appearing for the final year of the Bachelor's/Master's degree examination in 1993 can also apply. In such cases final selection will be provisional subject to fulfilment of above requirements but they will be required to submit their certificate for the completion of B.Sc./M.Sc. degree latest by the date of commencement of 1st semester 1993-94, otherwise, their candidature will stand cancelled.

SELECTION CRITERIA : There are 20 seats and admission will be made on the basis of competitive test/interview. Out of which 25% seats are reserved for the candidates belonging to scheduled castes/scheduled tribes. Eligible candidates are required to appear in the written test to be held in the month of April/May 1993 at Ludhiana and the date of the test will be communicated to the eligible candidates by post.

APPLICATIONS : The Prospectus alongwith application form can be obtained from the Registrar by sending crossed Indian Postal Order (s) for Rs. 20/- by post payable to the Comptroller, Punjab Agricultural University at Post Office PAU, Ludhiana or Rs. 15/- at counter against cash payment. The envelope containing request for application form of the complete application form should be marked 'ADMISSION TO MBA'.

The candidates should also attach attested copies of all certificates from matric onward with their applications otherwise weightage of marks will not be given to them. The candidates are also required to submit two additional passport size photographs, in addition to a copy of photograph pasted on the admission form. All the photographs must be attested by a Gazetted Officer. The candidate must also give his/her name and father's name on the photographs and affix these photographs on the admission certificate, supplied to them alongwith the application form. All the photographs should be from one negative.

LAST DATE FOR RECEIPT OF APPLICATIONS : 10.3.1993

EXAMINATION FEE : The applications should be submitted to the Registrar, Punjab Agricultural University, Ludhiana, alongwith Bank Draft for Rs. 100/- in favour of the Comptroller, PAU, Ludhiana. Incomplete application or applications without examination fee are liable to be rejected.

REGISTRAR

Hindi & Urdu Universities

Amrik Singh*

The compulsion to play politics is so overpowering in our country that we insist upon repeating the mistakes and refuse to learn from experience.

For example, we have universities which were established with the express intention of promoting certain languages. Amongst them may be listed Punjabi, Telugu, Tamil, even Sanskrit. The question is whether these universities have really helped the growth of the languages. Having headed one of them myself, I can say without any fear of contradiction that none of these languages is doing better because full-fledged universities were established to support their cause.

This is not to suggest that our languages do not have to be promoted. The problem really is that they are not being promoted. Not even when a whole university is established with the express objective of promoting the language concerned.

What is happening is the opposite of what ought to happen. Almost all Indian languages are lagging behind, and it is English which is forging ahead. It is widely acknowledged that today English is ruling the roost. It would not be an exaggeration to state that English is found to be much more acceptable than it was in 1947.

The issue, however, is not why English is growing but why our languages are not. It is too complex a question to be answered here but one thing is clear. Our languages are not growing because they have not become the vehicles of new knowledge and new thought. Some of the languages are doing better than others, notably Malayalam, Bengali and Marathi, maybe in that order. Languages like Tamil, Kannada, Telugu and Gujarati are not doing too badly either. The rest need not be mentioned perhaps.

The issue, therefore, is why some languages are not growing as fast as they ought to. Perhaps the worst offender in this regard is Hindi.

Not only is it spoken by two-fifths of the Indian population, films and the mass media help it enormously. What is more, Hindi has an official status and it is a constitutional obligation upon the Centre to promote it. A lot of patronage has, therefore, been extended to it by the Centre but it has not led to any marked achievement. Can it be said, for instance, that, as a language, Hindi is ahead of other Indian languages? Not even in the sphere of creative literature. Several other languages have much more to show in this regard.

The same is true of other branches of knowledge. The only area in which Hindi is prospering is in the field of journalism. That is helpful, indeed gratifying. What is required is growth in the literature of knowledge but it is not taking place.

Languages grow, first, when they are used extensively and secondly, for all kinds of purposes. Knowledge is infinite, as they say. Unless there are books about each branch and aspect of knowledge in a language, that language cannot be said to be growing. Experience all over the world has shown conclusively that the reading public and scholars and scientists have to interact with one another closely, intimately and creatively. Then alone can a language progress.

Sad to say, Hindi is becoming the vehicle of a certain mode of thinking which is far removed from the modern world. Harking back to the past may be a good, emotive slogan but it is not a substitute for keeping in step with contemporary developments. Amongst other things, it is this revivalist cast of mind characteristic of those who stand for Hindi which is coming in the way of moving with the times.

Now it is proposed that a Hindi university be set up. Some years ago a world conference on Hindi was held in Nagpur. Nagpur, therefore, claims that the proposed university be established there. There are claimants in UP, Bihar and a number of other States, too. Regardless of where it is located and so on, the crucial question is : what will it accomplish?

Some two decades ago, at the initiative of Morarji Desai, the Centre gave a grant of Rs. one crore each for every Indian language. Since Hindi is used in half a dozen Indian States, an attempt was made to pool the resources available and organise a joint programme of book promotion. It did not work. There was mutual jealousy, lack of imaginative planning and utter, unredeemed incompetence. There is no reason to believe that the establishment of a university would lead to a different outcome.

When a university is set up, a large number of new jobs are created. Most of the people who land these jobs come to acquire vested interests. Accountability is almost nil and whoever is appointed goes on, year after year, and nobody is the better for it. When, as the Vice-Chancellor of Punjabi University, I appointed a committee to evaluate what had been done during the preceding 15 years, a summary of the report published in a newspaper carried the heading, "Scholars Fattening on University Funds". Something of the same kind would probably happen in the present case too.

*Former Secretary, Association of Indian Universities,
2/26 Sarva Priya Vihar, New Delhi-110 016.

(Contd. on page 12)

Teachers Perceptions : Administrators Challenge

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Educational institutions are unique organisations set up to achieve specific social, cultural and vocational goals. Like any other organisation, the educational institutions are also social systems with their activities being governed by social roles and status. They are "complex – socio technical systems in interaction with environment" (Keith Davis 1981) having both adaptive and maintenance mechanisms. They have a dynamic environment where we find two diametrically opposite forces at work – that is the urge to modify the structure and functioning in order to conform to changing environmental conditions, as well as the urge to resist change. Besides, being an open-ended system they cannot escape the influence of other powerful subsystems like politics, religion, economic setup, which may exert their influence either directly or indirectly on their goal. This produces a state of 'dynamic disequilibrium' in an organisation which may lead to stress and tensions and thus promote or frustrate the goals, and thus affect its culture either favourably or unfavourably.

The culture of an organisation is an important variable which influences the commitment, performance and productivity of its employees. Stoner and Freeman [1992] define culture as "the set of shared values, beliefs, attitudes and norms that shape behaviour expectations of each member of an organisation." Thus a set of positive beliefs, values, attitudes result in high productivity and commitment of organisational members, which in turn reflects as healthy culture. On the other hand a set of negative beliefs, values, attitudes is likely to result in low productivity and commitment and poor organisational culture.

In any organisation, one of the indicators of culture could be the perceptions and feelings of the members of the organisation about its various facets. Given this framework, in the present paper our attempt is to understand the culture of our higher educational institutions particularly the universities and colleges. In this regard, it is often complained that the quality of education in India is fast deteriorating. The teachers lament that students of today do not compare favourably with those of yester-years, and on the other hand the students hold a negative image of their teachers. The bond between the teacher and student, the teacher and his institution are missing. They have undergone a tragic change in the past few decades. Today both teaching and learning is reduced to an uninspiring routine.

In the present paper an attempt has been made to understand the perceptions and feelings of higher education teachers about their community and institutions by using projective methodology on 176 university and college teachers. The authors feel that since the perceptions and feelings of an individual shape his/her attitudes, and these attitudes in turn shape behaviour, hence they influence the motivation level of an individual. Therefore it was felt that it would be useful to understand the perceptions and feelings of the teachers about their own community and institutions and its possible implications on the commitment, performance and productivity of teachers. This in turn would also enable us to understand the culture of our educational institutions.

Methodology

The important aspect of the methodology besides being projective is that our research on higher education teachers is basically the outcome of training programmes for Personality Development for higher education teachers at the Academic Staff College (ASC) of Lucknow University and one such programme at ASC of Aligarh Muslim University. These programmes were conducted for 2-3 days' period and they were part of the one month orientation programme for higher education teachers. These personality development modules were highly experiential in nature and the data generated through the personality microlab items was collected to give feedback to the teachers about their personality. These items consisted of incomplete sentences on various dimensions of personality, attitudes and perceptions of their own roles and systems, etc. There were in all 51 items which were presented by the facilitator in randomized order and the respondents were required to spontaneously respond to each item by completing the sentences with whatever came to their mind. After this the participants were asked to give their responses as per the grouping and based on the emerging patterns they were given feedback about their profile and their perceptions about their roles etc., and its implications in their personal and professional lives. In some cases supportive feedback was given by those participants who were from the same institution, in terms of how they usually experienced the respective participant in day to day life.

Given this nature of data, which was basically generated to give feedback to the participants, for their own self growth and development, the chances of such data being faked is very low. In fact the projective

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spontaneous methodology further reduces such a probability.

The present paper deals with the responses obtained on some of the items that dealt with the teachers' perceptions and feelings about their own community, institutions, etc. These responses were grouped into various categories using content analysis method. To bring objectivity two approaches were used. [a] Two raters independently categorised the responses of 25 randomly selected respondents and found out inter-rater reliability which was found to be high and positive as can be seen in Table -1 below, and [b] all the responses of 176 respondents on these items were discussed by both the raters in terms of their categorisation.

<i>Item</i>	<i>Inter-Rater</i>
Today's students are -----	.89
Today's teachers are -----	.85
Today's colleges and universities are	1.00
Sample	

The sample consisted of 176 university and college teachers, in the age group of 24-40 years. Out of 176, there were 104 males and 72 females. There were 112 Arts and Commerce teachers and 64 Science teachers. 64 teachers belonged to university and 112 were from affiliated colleges.

Analysis of Results and Discussion

When we look at the perceptions and feelings of the teachers about their own community, institutions and roles, the entire picture that emerges is quite dismal. It was not long before, when teachers regarded their profession as noble and took pride in their institutions. But with changing values and work culture we find that the teachers today neither have a positive image of themselves nor of their institutions.

The results show that only 22.72% [40] of the teachers really wanted to be teachers and the remaining had different career aspirations such as doctors, engineers, administrators, etc. Thus we find that teachers in increasing number are those people who if they had their way in life would not have joined this profession and as such are likely to have low motivation for academic pursuits and excellence. In the case of female teachers some even did not have career aspirations and just wanted to be "good housewife" and perhaps had entered the profession just to supplement their family's income. In general, perhaps they came to the teaching profession "not in the spirit of self sacrifice but with purpose of self seeking and they see in this job a service which has plenty of leisure and no monitoring and evaluation." (Bhide 1990).

An interesting finding of this study is, that 43 [24.43%] teachers did not give any response to this item.

[When I was a young boy/girl I wanted to be ----]. The authors in their experience have not noticed such a high percentage of "no response" category in relation to this item with any other group such as managers, administrators, doctors. For example in one such group of 110 respondents there was only 1 No Response and there were only 5 vague responses. Psychoanalytically it indicates that perhaps this item could have aroused the anxiety of the respondents, as they did not want to become teachers and this could have created an emotional block. This is further substantiated by even a high number [33] of vague responses to this item [18.75%]. Therefore it is possible that either they were emotionally blocked and could not give any response or out of anxiety they ended up giving vague responses.

Once in profession they still carry on with negative perception of teaching community. One can almost experience their disgust, dissatisfaction, and disenchantment with their profession when one looks at their responses to item "Today's teachers are -----." It is noticed that 71% of them regarded teachers as shirkers, national tehsildars, corrupt, hopeless, irresponsible, anything else but not teachers' etc. against 21% who regard teachers as 'nation builders, sincere, dedicated.' In another study by Sinha [1969] also it was found that even those who came to this profession of their own choice in the hope of learning and leading a honest life were now "dissatisfied, miserable, pessimistic and unhappy". Today the teachers even have a low self esteem as indicated by the Report of the National Commission on Teachers-II [1986]. The report points out some of the factors responsible for deterioration of the status of teachers. These in order of importance are : salary, service conditions, lack of recognition, lack of devotion, integrity and sense of pride. In this regard it may not be out of place to mention that even in the United States teaching as a career has been losing its earlier importance. In a survey in 1983 it was found that only 45% of American population would like anyone of their child to take up teaching as a career as compared to 75% in 1969 [Gallup 1984]. In another survey it was found that when teachers were asked to rank 12 occupations in terms of their contribution to the general good of society and prestige or status, teachers ranked themselves first in contribution but last in status. Elam [1989] describes this phenomena as teachers' "martyr syndrome" which could be the result of their being "underappreciated and under rewarded". In the American context this profession might have lost its earlier importance due to low material rewards, but in the Indian context it could be true only to a certain extent but not entirely. The last two Pay Commissions for higher education teachers have made their pay scales quite attractive and at par with All India Services. In view of this, such negative perceptions are alarming and need to be understood and explored.

The type of 'martyr syndrome' referred to by Elam [1989] is likely to effect the perceptions and commitment of the teachers to their own institutions. They are thus likely to be alienated from their institutions and not likely to have 'a strong desire to maintain organisational membership and identification with their institutions'. [Mowday, Steers and Porter 1979].

The results of our study do indicate such a possibility, when one notices that 74% of them have negative perceptions and feelings about their systems. Traditionally educational institutions were regarded as temples of knowledge where emphasis was on learning and all round development of personality, but today these institutions are regarded by teachers themselves as "degree giving shops, centres of holiganism, centres of politics and mad houses". One can almost foresee that if this is the type of perceptions and feelings the teachers hold about their own community and institutions, what could be their level of commitment and the quality of education imparted by them and hence what could be the quality of their students who are going to be the future citizens of our country. Under these circumstances it would be utopian on our part, to expect the teacher to play the role of a facilitator for the development of the personality of the student, unless drastic changes in the system and beliefs and values of our teachers take place. Today unfortunately "the premium is not on classroom effectiveness but on larger routine." [Louis and Smith 1990] and the result is that against a small minority of quality product the majority of the students whom come out of these institutions of higher learning have little more of book learning a degree, but with very little capacity for self study and application of mind. In the process they have poor communication skills and highly limited world wide view. Thus we find a situation where ultimately both the teachers and taught find themselves in a situation which is highly dissatisfying and demoralising. And it is because of this that even today's students are also perceived negatively by 69.32% respondents.

India, like any other developing country, today expects her teachers not to limit their roles to classroom but assume a wider role that would involve the students in developmental work such as creating scientific temper in communities and actively participate in various community development programmes, as indicated by Pande and Chandra [1992]. In this regard it is disappointing to note that though the Report of the National Commission of Teachers of Higher Education [1986] in its findings does discuss about the erosion of teachers' professional values and work ethos, it does recognise that "no programme of high quality education can be implemented by the people who are themselves not creative and who may be devoid of innovation, discovery or application of knowledge to new situation" and that since that cognitive domain alone cannot be

singled out as the objective of teaching, the affective domain of attitudes, character, values and social and developmental concerns have to be taken into account" [Report of the National Commission on Teachers-II 1986 p18]. Unfortunately, in its main recommendations specially in the area of selection of teachers it lays overemphasis on the selection process which is again biased towards selecting teachers on the basis of cognitive domain alone. In view of this the present selection system is still likely to keep on selecting mass of teachers, who could be high on cognitive domain but may have teaching as one of their least preferred choice of career, which may further lead to the negative perceptions of the community about themselves and their institutions and thus end up with the same poor culture of educational systems as is evident from this study, as well as can be felt and observed all around (Kalra, Raina and Gupta 1992).

The recommendations of National Commission on Teachers of Higher Education seem to have hedged or overlooked these issues perhaps because the task is stupendous one. But given the pivotal role a teacher plays as the developer of future citizens, this aspect cannot be ignored. Though some positive steps have been taken by University Grants Commission (UGC) such as setting up of Academic Staff Colleges in various universities for training and development of higher education teachers, but here also the emphasis in these programmes is usually on cognitive aspect and the effective domain is generally neglected.

In view of this the problem needs to be addressed at two levels, – both at training as well as selection level. In the case of training, the development programme for higher education teachers should also have experiential based personality growth modules on a continuous basis and in selection of teachers, an important procedure, as the authors of the paper feel, could be that the selection of teachers on All India basis should not only be based on the cognitive domain alone but also on affective domain through certain innovative methods which make it possible to identify developmental teachers. Some institutions like the Indian Institutes of Management follow some such procedures. In this regard, the UGC could also think of setting up of 5 regional centres where all those who qualify the All India Test should undergo a second stage of screening to look into their affective domain. This and other such innovative measures will enable to secure people who have a holistic developmental personality and this will go a long way in improving the standards of education in India.

Thus in conclusion we can say that the success of any educational organisation will depend on the competence and motivation of their teachers. In any plan of University reform the main concern must be for selecting right kind of faculty with necessary qualifica-

tions to discharge the multi-faceted responsibilities. If we are anxious to raise the scholarship of our students and thus of our universities and colleges, we must first raise them in teaching community itself. A teacher should be a man with scholarship, intellect and respect for teaching profession and love for his/her students, who can kindle intellectual enthusiasm in his subjects.

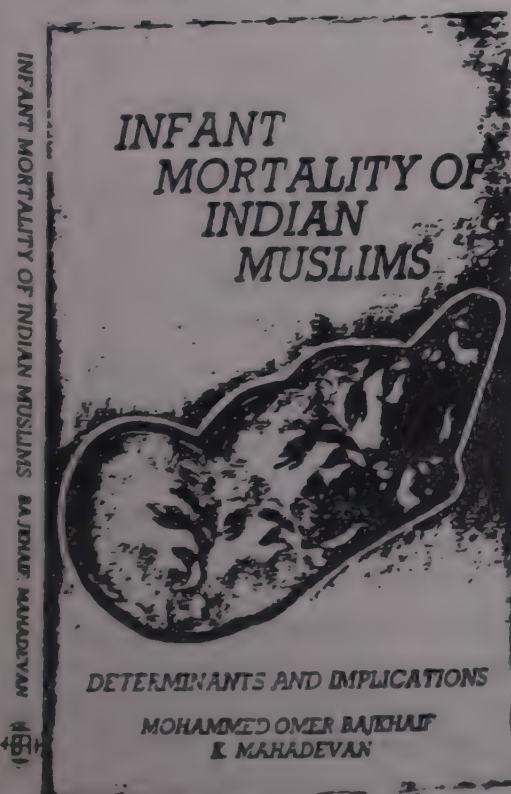
Our attempt in this paper was to bring out certain key issues and suggest possible interventions which could be useful in improving the quality of education. It is now up to the policy makers and administrators to rise to the occasion and take up the challenging task ahead or otherwise with disillusioned and dissatisfied teachers the nation will have to pay the price for equally dissatisfied and disillusioned future citizens. This is the challenge before educational administrators and it is to be seen how they handle it. The future of our higher educational system will largely depend on this.

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Need for Crossbreeding in Indian Universities

Ramesh K. Srivastava*

Most Indian universities are like islands hardly falling in line with international or national academic traditions. They were created by the State, for the State, and within the State, as if their academic functions were to be restricted to a certain geographical area. Consequently, like a tethered goat, a university could think only upto the limits of the rope beyond which it was not supposed to reach. Such universities have become so enfeebled that they survive more as chronic patients tottering on their last legs rather than actively engaging themselves in healthy intellectual and academic pursuits. It is only in name that they can be called universities.

Broadly speaking, there are two kinds of institutions in India – national and state, though such qualifications are not openly pronounced. The national institutions are funded either by the Central Government or by the University Grants Commission and enrol students from all over the country. Such institutions, to name a few, are Delhi University, Jawaharlal Nehru University, Indira Gandhi National Open University, University of Hyderabad, Indian Institutes of Technology at Bombay, Calcutta, New Delhi, Madras and Kharagpur, All-India Institute of Medical Sciences, New Delhi and so on. It is in such institutions that one notices a national outlook with teachers and students from all over the country. On the other hand, there are numerous state universities which are funded by the State governments and which employ teachers and admit students largely from the same state. As if to ensure the perpetuation of State control over their universities, they make the regional language as medium of teaching, examination as well as of official work in the university so as to discourage outsiders from coming to the university either as teachers or as students. For all practical purposes, such universities are no better than small degree-awarding colleges.

The politicians in some states, prefer these low-profiled State universities with which they meddle at will by having their own people appointed as teachers and other employees and by having their politically-active students admitted to various classes. By the infiltration of such political elements among both students and teachers, the politicians make these universities as springboards to launch their political campaigns for various elections as well as for bargaining favours from university authorities by instigating such elements to go on strike at the drop of a hat. They are hardly con-

cerned with the future of the institutions or even of the teachers and students. What weighs with them is how to expand the base of their political supporters and even voters in the university. By availing of the contacts of these teaching-politicians, the students of today become the teachers of tomorrow who, in turn, breed the same species, creating a vicious chain in which teachers are selected and students admitted not on the basis of merit but on the political support they draw from the people in power. With the passage of time, such an institution becomes a recognized area of political activity rather than of academic pursuits.

The experts in Selection Committee for university teachers are often selected on their pliability of flexibility who could easily be tempted by or succumb to the pressures of the State or university authorities. After an impressive facade of academic evaluation of candidates in an interview, they end up in selecting teachers on extraneous considerations in which the ultimate casualty is the academic interest of the institution. The experts who are eminently qualified and have a national and even international reputation for academic integrity are intentionally kept out of the Selection Committees of these state universities, because they do not oblige the politicians and the university authorities. Consequently, the more weak-kneed, pliable, and academically unsound the expert is, the more is he suited to the university authorities because he is amenable to persuasions and is willing to put his signatures on the dotted line. His only interests are to claim his T.A. and D.A. from the university, to bargain for adjusting his own students as university teachers, and to boast in his institution that he is on the selection committees of so many universities and hence is capable of pushing up his supporters and pulling down the opponents in any university. By establishing such links in various universities, these experts watch each other's non-academic interests and form the society of mutual admiration. Such experts, without conscience and qualms, would not hesitate to recommend an eligible nincompoop for university teaching post in order to oblige the politicians in power or the university authorities.

A Vice-Chancellor is a spinal cord of a university. It is on his personal nature, temperament, vision, foresight, academic qualifications and administrative capability that the university is made or marred. It is he who can smoothly run or totally ruin a university. If the Vice-Chancellor is of a very high calibre known for his integrity and scholarly bent of mind, he can take the university forward provided he has no worry regarding his own job and no temptation for another term of Vice-Chancellorship. In most state universities, a Vice-

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Chancellor is selected not so much on academic as on political or other considerations. It is a known fact that an academician promotes academic interests whereas a political incumbent builds up and testifies only his political links and alliances.

Another main reason for constant deterioration of these state universities is the inbreeding of teachers. A Vice-Chancellor appoints a Head of the Department on non-academic considerations who hires his flattering students as teachers and who in turn hire or admit their flattering politicians-in-embryo. This process continues till the department or institution is full of sycophants and pseudo-teachers who gravitate and rotate around the centre of power for sustenance and promotion. If the head of the department happens to be an academically one-eyed man, he is bound to appoint teachers who are no better than him so that he could become an undisputed king in the country of the academically blind teachers. Whatever and in whichever manner their teacher had taught to the students, these very students on becoming teachers teach the same way or even worse. The disastrous result is that some unhealthy traditions and short cuts to teaching are passed on from one generation to the other and the scope for sincere teaching, let alone excellence and innovation, is completely minimised. In certain cases, even the yellowing classroom notes dictated by the teachers to the students in one generation are cellophone-taped at the cracking folds and frayed edges by the student-turned-teacher for use in the next generation. The students are like plants who need sufficient manure, fertilizer and fresh air to lead a healthy life. But in an atmosphere where outdated and stereotyped methods of teaching are handed down from the senior to the junior teachers, the development of a student is bound to be stunted. This inbreeding of teachers from the same university and even by the same teachers results in academic stagnation.

An ideal university must have teachers and students from all over the universe. A tendency often observed in these state universities is that in the name of promoting the sons of soil, a healthy competition with outsiders is not allowed to take place. An unwritten rule in several state universities is that the entry of no teacher or student from outside the State be encouraged. To promote this unhealthy practice, some universities under political influence make the knowledge of regional language compulsory, thereby foreclosing the door to the outsiders, some others insist on domicile certificate for certain popular classes. When the competition is among the students of other universities within the same State, each university adds 5 to 10 marks to the merit of its students so that a more deserving student from the neighbouring university within that very State may not obtain a seat. This protectionism in hiring teachers and in admitting students by keeping them insulated from a tough competition turns out to be a liability in the

succeeding years as the ill equipped teachers and handicapped students surviving on artificial props turn out to be a burden on the State by being good for nothing.

These methods of discouraging outsiders to promote inbreeding of teachers from within the State and even from within the university may initially appease the local people on the plea that they are being given preferences over more competent outsiders, but in the long run prove to be to their disadvantage. By being academically incompetent, and used to shortcuts to progress, for survival, promotion and power of tyrannising over others, these people by forming links with State politicians and university authorities audaciously refuse to do any teaching work and the complaints against them fall on deaf ears. On the contrary, a meritorious teacher from outside the State, in the absence of such extraneous links, performs his duties sincerely for mere survival. Thus the sons of soil at the giving end turn out to be the biggest enemies of the sons of soil at the receiving end.

It is a matter of some surprise that the universities which spend crores of rupees every year, have no system by which the public could judge or evaluate a university on the basis of its performance whether its results are worth even one-tenth of the public money it uses! The teachers and the students come and go but the university continues forever without any evaluation whether it goes up or down, forward or backward, and whether it is doing academic good or imperceptible harm to the community, the State and the country. Rather than being complacent that a university has given employment to the local people as teachers, clerks and peons, and, by in-breeding within them, to their sons and daughters, they must evaluate each of these state universities the same way an industrial concern is judged on the basis of its industrial output and profitability. The simplest test could be to prepare a year-wise statement of students selected in various competitive examinations by a university. Similarly, participation and organisation of international and national conferences, research projects and research grants received from U.G.C. and other research organisations, research papers published in national and international journals could be the other parameters. Number of books and journals are in the university library; students who have successfully competed for the U.G.C.'s Junior Research Fellowship Test; proportion of budget money spent by the university on the salary of teachers and non-teachers and that spent on physical development of the campus and for academic innovations and development. If the answers to the above questions were to be in the negative, it will clearly be borne out that the state university concerned serves not on merit but on political patronage.

It is in these State universities, too, that the seeds of national disintegrations are sown. The short-sighted teachers breed myopic students who on becoming teachers do the same and for whom their State, their

city, their village and their family are everything – nothing beyond. It is here that they think in terms of their State being more important than the nation, their community more important than other communities, their caste more important than other castes, and their language more important than other languages. Descending further, they begin to think of employment only of their sons, daughters and relations. Rather than expanding the vision of the world, they shrink it day by day. They move not from near to far but from far to near. For them, the world is not a family but the family is the world. Thus consciously and probably unwittingly, each move they make for strengthening the narrow, regional forces ultimately goes to promote the forces of national disintegration.

There are certain remedies to check the degeneration of these State universities. On an experimental basis at least one university in each State can be selected for promotion as a real, universalized, open, free-for-all institution in which there is no quota system and no discrimination on the bases of domicile, religion or State. Merit alone becomes the criterion in selection. The Vice-Chancellor must be a man of national or of international repute but must not belong to that particular State in which the university is located. The university must be guaranteed adequate funds to meet its routine requirements as well as for carrying out experimental and innovating work so that the Vice-Chancellor, instead of shuttling between ministers and bureaucrats for the release of its fixed grant, is free to pursue the academic aims. The university must be named after the State or the city but in no case after a personality, however great he might be. The medium of communication, examination and administration must be English so that all the students from any State could feel free to join it and are put to the equal advantages or disadvantages of a foreign language.

The advertisements for the posts of teachers must be in national rather than regional papers. The panel of experts should be prepared not by mere designation but by their academic achievements in their particular fields. The period between the date of advertisement and the date of submission must be two months if the form is to be received from the particular university or one month if it could be submitted on plain paper. The University Grants Commission can devise a standardised application form so that the deadline for submission of forms does not lapse before the form is received by the applicant. No restriction must be there on the number of applications a candidate submits in a year and no binding on his routing his application through proper channel. The selection should be made not by merely interviewing candidates for twenty minutes but by spending a couple of hours, even days in observing the teachers in their classroom performance. As a matter of inviolable rule, the students who pass from one university be not allowed to take up the first teaching job in that very university unless he has proved

his worth in some other university outside the State. The merit-promotion and time-scale-promotion schemes must be scrapped, for they value years of experience rather than the quality of work. Besides, the longer a teacher stays in a university, the longer roots he makes and the more inbreeding of teachers results from it. The practice of inbreeding of teachers within a university is completely discouraged in some universities in the United States where in many institutions students cannot take up their first teaching job in the university which awarded him the last degree unless he is selected by any other university. For the healthy functioning of a university, crossbreeding of teachers from other states and countries is as essential as it is for plants, animals and other species.

Hindi & Urdu Universities

(Contd. from page 5)

Apart from Hindi, there is also a proposal to set up an Urdu University. Once again, it is not Urdu that would grow in consequence. The experience would be the same as in the case of other universities which were set up to promote certain languages. In plain words, some jobs would be created and filled up; and that is about all.

Some seven decades ago, Osmania University was set up by the then Nizam of Hyderabad to promote the cause of Urdu. It must be acknowledged that a good deal was accomplished by that university, including the writing of some original books and a large number of translations. Nonetheless, the system had to be discontinued for reasons which it is not possible to go into here.

There is so much more involved when it comes to the growth and development of a language than is usually understood. State patronage is one factor but it is not the only factor. Basic to everything else is a feeling of commitment to one's language. Apart from the Indian subcontinent (incidentally, Bangladesh has developed Bangla to quite an extent) and some African countries, in almost every country it is the local language which is used. This is true of all other Asian countries, especially our neighbours like Thailand, Indonesia, Vietnam, both the Koreas, China and Japan. The same is true of Iran.

Everywhere the broad pattern is that the country's language is given primacy and then the study of a foreign language is promoted. It is some such pattern that we in India would have to evolve. What eventually, happens, however, is anybody's guess.

Meanwhile, we are adopting populist postures which would no doubt bring electoral gains and nothing as far as the real objectives of establishing a university are concerned. But that is what seems to count much more decisively. The proposal to establish Hindi and Urdu universities is an example of that cast of mind.

Sustainable Nutrition Security

"The challenge facing the country today is achieving sustainable nutrition security, which involves physical and economic access to balanced diets and safe drinking water to all citizens. Only nutrition security at the level of individual households can ensure that children have an opportunity for the full expression of their innate genetic potential for physical and mental development", said Dr. M.S. Swaminathan, Hon'y. Director, Centre for Research on Sustainable Agricultural and Rural Development, Madras while delivering the Convocation Address at the 135th annual convocation of the University of Madras. Excerpts

The only form of diversity we should not tolerate is gross inequity among members of the human family. Long ago the Roman Philosopher Seneca said, "A hungry people listens not to reason nor cares for justice, nor is bent by any prayers". Mahatma Gandhi expressed a similar view when he said, "to the hungry, God is a loaf of bread". There was a big famine in our country in 1857 when this University was established. The then British government setup a Famine Commission led by Col. Baird Smith to study the situation and suggest remedial steps. Col. Baird Smith gave an interesting report which pointed out that Indian famines are "famines of work" rather than of food. Where there is work there is money and where there is money there is food.

In fact the British Colonial period began with drought and famine in Bengal in 1770, during which one-third of the population of province perished. Just prior to the end of the colonial era, another great Bengal famine occurred during 1942-43, when about 3 million people died of hunger. Between 1770 and 1880, as many as 27 scarcities and famines were recorded. Twenty million lives were lost in about 20 famines during the period 1850 to 1900.

The population of the Indian sub-continent (including Pakistan and Bangladesh) was less than 300 million when great famines claimed

numerous lives. The 1891 population figure of undivided India was 282 million. 10 million people died in a big famine in 1892. Today, the population of India alone is about 875 million and the population is growing by over 15 million each year. Yet, famines have been avoided since the country became independent in 1947. Food production was affected adversely by drought in 1965-66 but there were no famines thanks to extensive food imports, largely under the PL-480 programme of the United States of America. Since the early seventies, the country prevented famines even during adverse weather conditions through a carefully designed food security system involving the maintenance of both substantial grain reserves and an extensive public distribution system. The food grain reserves were built largely from home grown wheat and rice, since from the late sixties, the rate of growth in food production generally exceeded the rate of growth of population. Timely imports both on concessional and commercial terms were made to replenish stocks in years when they were depleted due to widespread drought. By any standard, Independent India's famine avoidance strategy is a remarkable achievement. How did this happen?

Three major groups of factors were involved. First, farm men and women, whether literate or illiterate, took to new technologies with en-

thusiasm and efficiency, provided they were convinced that the change will help to improve their livelihoods and provided they were enabled to adopt them through appropriate public policies in input pricing and supply and output pricing and procurement.

Second, the country had the wisdom to invest on agricultural research and education and build a national grid of research institutions, agricultural, rural and women's Universities and grassroots level training organisations like Krishi Vigyan Kendras. Not only the Indian Council of Agricultural Research (ICAR), the national agency for agricultural research and education, but the entire scientific community working in the laboratories of the Ministries of Science and Technology, Environment and Forests and Commerce, and the Council of Scientific and Industrial Research (CSIR), Departments of Atomic Energy, Biotechnology, Space, Electronics and Ocean Development, Indian Council of Medical Research (ICMR) and general universities supported by the University Grants Commission did their best to assist rural areas with new technologies. Several Departments of the Madras University have made significant contributions. International collaboration also helped much, particularly with Institutions supported by the Consultative Group on International Agricultural Research (CGIAR). Experience has shown that without a strong and dynamic national research system, advantage from international research will be minimal. This was clear from the rapid progress made in the country in wheat and rice improvement based on the initial material supplied by Dr. N.E. Borlaug from Mexico and by the International Rice Research Institute in the Philippines.

A third but vital contributory factor was government policies and programmes in rural techno-infrastructure development such as roads, irrigation, electrification and

their other forms of energy supply, extension services and markets, land reform, remunerative pricing policies, credit supply, development of efficient extension services and various other forms of support to small and marginal farmers became possible due to political will and foresight in administrative action.

Thus, mutually reinforcing packages of technologies, services and public policies made it possible for farmers to make the country self-sufficient in food grains at current levels of purchasing power. By mid-seventies, the challenge shifted from physical to economic access to food. Inadequate opportunities for off-farm employment and inadequate attention to social organisation in rainfed areas with regard to saving and sharing water and to post-harvest technology, including biomass utilisation, led families without land or livestock or fish pond or trees remain underemployed or often unemployed. India's malnutrition problem thus became largely one of under-nutrition or calories deprivation. It is estimated that over 200 million children, women and men living in poverty now suffer from chronic hunger. While famines have been avoided, chronic hunger persists and without jobs for all, this problem cannot be solved.

Therefore, the challenge facing the country today is achieving sustainable nutrition security, which involves physical and economic access to balanced diets and safe drinking water to all citizens. Only nutrition security at the level of individual households can ensure that children have an opportunity for the full expression of their innate genetic potential for physical and mental development.

In all our famine mitigation strategies, providing work to those who need it has been an important component. We need to double our current annual growth rate in employment opportunities during the rest of this decade if we are to ensure that all our young people

have an opportunity for a satisfying life. According to the Union Planning Commission, more than 80% of non-farm employment is in village and small industries including khadi, sericulture, handlooms and powerlooms. Actually village and small scale industries employed about 30 million persons in 1990 as against 5 million by large scale industry.

The Planning Commission on the basis of this study estimated that the annual addition to the labour force will be 6% of which only 10% will be absorbed in the organised sector, on the basis of a 5% growth rate of the economy. These statistics are important in the context of the constant quest for vocationalisation of education. Many times the syllabi of Universities are changed with the ostensible aim of equipping students for jobs. Quite often, this has led to a considerable erosion in the standard of teaching of the basics both in science and humanities.

I personally believe that to bridge the growing gap between employment opportunities in the rural areas and the skill needed to take advantage of such opportunities, we should introduce location-specific, non-degree training programmes. These must be based on a careful study of markets and the demand for goods, services and commodities. The Madras University is to be complimented for the number of non-degree training programmes being organised by the various departments of the University. However the necessary linkages with market surveys, credit institutions and quality control mechanisms are still weak.

We must attend to the organisation of education for jobs somewhat differently than is the usual practice. Constant tinkering with syllabus is not the answer to this problem since in any case teachers remain the same and teacher re-training programmes are weak. What we need is a consortium of educational institutions which can help to end the prevailing mismatch between

employment opportunities and employable skills. I believe a Tamil Nadu Educational Consortium For Jobs spearheaded by the Madras University comprising other appropriate technical, agricultural, veterinary and women's Universities as well as IIT, CSIR, ICMR and other institutions will be able to make a substantial contribution in organising relevant non-degree programmes designed to impart skills related to marketing opportunities. Further, to arrest the growing rich-poor divide as well as environmental degradation, it is important that we impart a pro-nature, pro-poor and pro-women bias in the development of both public policy and technology.

If we look back at the 20th Century which is now drawing to a close we observe great progress in science and technology which now permeates all aspects of life. However, in 1992 at the United Nations Conference on Environment and Development (UNCED) held at Rio De Janeiro, it became clear that whatever was described as "Progress" in the past may not be so, when the achievements are assessed in the context of long term sustainability. We need a new definition of progress which integrates the principles of economic profitability and market mechanisms with those of social equity and ecological sustainability. Such a change of course is needed not only in our country but also in the industrialised world. For example, the University of Bologna in Italy on the occasion of its 900th anniversary developed a *Magna Charta* for University education. The *Magna Charta* stipulated the following three fundamental principles which must, now and always, support the vocation of Universities:

"1. The university is an autonomous institution at the heart of societies differently organised because of geography and historical heritage: it produces, examines, appraises and hands down culture by research and teaching."

To meet the needs of the world around it, its research and teaching must be morally independent of all political authority and intellectually independent of all political authority and economic power.

2. Teaching and research in universities must be inseparable for the university not to lag behind changing needs, the demands of society, and advances in scientific knowledge.

3. Freedom in research and training is the fundamental principle of university life, and governments and universities, each as far as in them lies, must ensure respect for this fundamental requirement.

Rejecting intolerance and always open to dialogue, University is an ideal meeting-ground for teachers capable of imparting their knowledge and well equipped to develop it by research and innovation and students entitled, able and willing to enrich their minds with that knowledge."

We need a similar *Magna Charta* for our universities, which will enable them to meet current and emerging challenges. It is said there is no pleasure without pain. Looking back on 1992, the pleasure our country has witnessed has largely been in the agricultural sector. Rains have been good, crops have been satisfactory and oilseed production has been excellent. While the financial scam has been a dark spot, the Ayodhya tragedy is a blow to the spiritual psyche and ethos of our nation. Unlike a wound of the body, a wound of the mind takes a very long time to heal. Yet we should not despair. Gandhiji diagnosed our national strength long ago, when he wrote "In rural India, an age old culture is hidden under an encrustment of crudeness. Behind this crude exterior, you will find a deep reservoir of spirituality. You will not find such a thing in the West. Take away his chronic poverty and his illiteracy and you have the finest

specimen of what a cultured, cultivated citizen should be". It is the privilege of our universities to combine science with this spiritual strength and thereby help all our people to lead a better life.

This task will not be easy. Technology, training and trade have been the primemovers of economic prosperity in industrialised countries. The average annual per capita income in industrialised countries is now nearly US \$ 20,000/- while that of the poor countries is about \$ 400/-. Therefore, to raise Southern affluence to today's level of the North, technology must improve over 50 fold in developing countries. Historical technological improvement rates never have exceeded a fraction of the needed 50 times. It will therefore be futile to follow the same path of quality of life improvement. Sir Michael Atiyah, President of the Royal Society of London, said in a recent address, "Turning our scientist into business entrepreneurs is not the solution: it is neither desirable nor feasible". He further said "the current emphasis on market forces may have its merits, but the laws of the market are not necessarily in harmony with the laws of nature". The answer to our problems of poverty and illiteracy therefore lies on a reordering of our priorities to focus on issues such as primary education, primary health care, gender equality, environmental hygiene, safe drinking water and sustainable life styles.

Tamil Nadu and Kerala have shown that higher rates of human development can be achieved even under conditions of low per capita income. A threat to this alternative pathway of development is the growing violence in the human heart. The University of Madras can take the lead in establishing a *Conflict Resolution Centre* where proactive analyses of emerging social problems can be undertaken

and love and understanding of cultural pluralism and religious diversity can be promoted. Ultimately, the solution for contemporary national and international ills lies in the prophetic words of Gandhiji : "The world of tomorrow will be a society based on non-violence. The ecological movement in the West is essentially a movement to preserve nature against the onslaughts of industrialisation. It will have no deep meaning or relevance for the people unless it is also simultaneously directed against the monstrous accumulation of armaments. We cannot have an ecological movement against violence on nature, unless the value of non-violence is made central to the ethos of a culture" (From Piarelal, *Towards New Horizons*, Navjivan Publishing House, Ahmedabad, 1959). This is an appropriate message for the post cold-war world.

Ours is predominantly a land of the youth. More than 50% of our population is below the age of 21. Thanks to the enlightened policies of the State Government, an increasing number of young people get opportunities for university education. Our universities can therefore play a significant role in moulding the value systems and socio-political ethos of the country. The concept of unity in diversity emphasized by ancient Tamil scholars and by Jawahrlal Nehru in recent times can become a reality only through education.

Over a century ago, Sree Naryana Guru built a temple at Arivipuram in Kerala with the following inscription :

"Without differences in caste or rancour of religions, This is a model place where all live like brothers and sisters".

Let the Madras University remain always such a temple, thereby serving as an affirming flame in the midst of a sea of despair. This should be our goal for 1993 and beyond.

80th Session of the Indian Science Congress

The Prime Minister, Mr P.V. Narasimha Rao, urged Indian scientists to evolve a native model for development, based on our needs, resources and capabilities rather than aping Western models. Inaugurating the 80th session of the Indian Science Congress at the University of Goa, Mr Rao said India needed a new path of development that promotes lifestyles that were less consumption-oriented, less acquisitive and more humane.

"One thing seems clear today that we cannot replicate the lifestyles of the West", Mr Rao said.

The fragile planet earth cannot support the energy-intensive development model followed by the West, and therefore, it is clear that it cannot be suitable for India, he told the 4,000-strong gathering of scientists.

Mr Rao said the new development model should aim at providing a better quality of life and the foremost issue towards this end will be to gainfully employ millions of countrymen.

"I look forward to our scientists helping our people acquire efficient skills even in the traditional forms of work. We cannot replace lock, stock and barrel traditional skills we have in our villages. We have to improvise them", Mr Rao added.

He called upon scientists to take up the challenge of developing indigenous technology without which India cannot be a global player in the international marketplace.

Without indigenous technology development, Indian scientists and technical personnel would turn into a labour force of industries of other nations, he warned.

The Prime Minister assured the scientists that his government was

committed to indigenous technology development and would like to see scientists and industrialists jointly launch major research projects of commercial importance.

Mr Rao said effective linkages between laboratories, universities and industries should be established with a sense of urgency, "if we are to make our efforts towards indigenous technology development more practical".

On the theme of the congress, "Science and quality of life," Mr Rao said a judicious and sustainable exploitation of available resources without environmental degradation was necessary to provide a good quality of life.

In the Indian context, the Prime Minister said scientific efforts should be focussed on providing better health, sanitation and clean water to improve the lot of the poor.

Stressing the need for inculcating scientific temper among the people, Mr Rao said recent unfortunate events in the country have highlighted, as never before, the importance of rational, scientific perspective of issues as opposed to blind beliefs and hatred that bigotry and closed minds produce.

In his presidential address, Dr S.Z. Qasim, general president of the 80th Science Congress, said scientists should bring about "changes in their ways of thinking to ensure that science is indeed used to improve quality of life of Indian people."

Dr Qasim said scientific institutions should work closely with non-Governmental organizations, voluntary agencies, agricultural and other development sectors instead of treating their activities as their own specialized areas.

The then Maharashtra Governor Mr. C. Subramaniam in his address suggested creation of a body with autonomy and expertise to bring all scientific and technical application efforts under one umbrella for coordinated interaction

This body would be more beneficial instead of a Department of Science and Technology Council, in a State, he said while participating in the plenary session on the focal theme of "science and quality of life".

A new approach was necessary to draw the best of capabilities and expertise available in the country for massively replicable applications of science and technology in industry, agriculture, and service sectors, he said.

The body, to be headed by an eminent scientist, could identify technologies relevant to State and recommend appropriate applications, interact between universities, research institutions and industry for developing and upgrading technology, and identify and develop the implementation of centres of excellence in science and technology.

Mr Subramaniam suggested that the Science Congress set up a group to conduct an inventory of available technologies within India that have commercial potential for large scale dissemination, to prepare a list of internationally available technologies that could be immediately transferred to India, to assess the impact of accelerated technology transfers over the next three to five years on local prosperity, exports and the attitude of the public towards science and technology. It could also examine the potential of a third world self-help initiative in technology, he said.

Dr Vasant Gowariker, Adviser to Prime Minister on Science and Technology, narrated the steps

taken for the transfer of technology benefits to the people and said that better scientific literacy would also help better quality of life.

Sri S.P. Godrej, industrialist, stressed the need for implementing environment protection and population control simultaneously for effective improvement in the quality of life.

The Director of the Indian Institute of Science, Dr C.N.R. Rao, speaking at the plenary session on the theme "Science and Quality of Life" and later delivering the G.P. Chatterji Memorial lecture, feared that in the new climate the industry would be "happy" importing from abroad. Industry "is yet to make a demand on science and technology", he added.

Referring to the enormous advance in material sciences abroad, Dr Rao regretted that even ferrous oxide for ferrites was being imported when India had the richest ores in iron. He recalled how the Japanese were advancing in sensors using new materials created in laboratories which, as raw material, cost little but as a final product resulted in value addition by 1000 times.

"To say that there should be no state intervention in supporting science in India is to destroy even the little that they are giving for science", Dr Rao warned "This psychology is hurting me. I can take care of myself. But when the Government feels that in its value system there is no place for science", he felt gravely concerned. "After all the cost of one plane will take care of all science in India", Dr Rao remarked answering the criticism that the Government was facing a resources crunch.

Pointing out that what scientists were demanding was not more money for themselves but minimum laboratory and library facilities, "to live creatively", Dr Rao declared in the name of all older scientists in the country: "In recent years science has

lost its freedom, especially in India" and the Thatcherist attitude of ignoring science was taking over in the country.

Yet another scientist administrator, Prof M.G.K. Menon, former Minister of State for Science and Technology, deprecated the criticism that science had done nothing for the country. He recounted that in raising production of foodgrains, milk, poultry or in improving access to public health, telecommunications, etc. Indian science had made important contribution.

The then Deputy Chairman of the Planning Commission, Mr Pranab Mukherjee, in his address admitted that science and technology could provide useful tools to the planners "but certain other conditions are needed to utilise these tools".

Space Commission Chairman, Dr U.R. Rao, explained how space technology had explained how space technology had brought about changes in the quality of life. The satellite based telecommunication and television meant instant and wider access of the common man to even the remotest part of the country. He said satellites were about to probe and reveal resources like underground water, minerals, agriculture, crop pattern, forestry, etc.

Dr Rao also referred to the disaster warning about cyclones achieved through satellite and ground based disaster warning systems. This had reduced death toll during cyclones on the eastern coast from over one lakh to just about a few hundred. This would be further improved with the INSAT-2B satellite that would be put in orbit this year.

According to the Space Commission Chairman flood forecast would form the next phase of application of space science to the improvement of quality of life. Better irrigation systems could be designed due to the revelations about underground water through satellite imagery.

On this occasion, the Prime Minister presented the prestigious C.M. Raman Birth Centenary Award 1993, to Dr S. Chandrasekhar of the Indian Institute of Science, Bangalore, for his outstanding contribution in the field of liquid crystals, optics and X-Ray diffraction.

He presented the Asutosh Mookherjee Memorial Award to Prof. R.C. Mehrotra, Vice-Chancellor, Allahabad University, for his contribution to science education.

The Srinivasa Ramanujam Birth Centenary Award was given to Prof M.K. Singhal of Meerut University for his outstanding contribution to mathematical education.

The annual Prof Hiralal Chakravarty Awards, given to botanists below the age of 40, were conferred on Dr R.S. Upadhyay and Dr K.K. Sinha of the Benares Hindu University and the Bhagalpur University respectively.

The 81st session of the congress would be held at Jaipur. Prof. P.N. Srivastava, emeritus professor of JNU, New Delhi would be the general president for the session with the focal theme "science and technology - excellence and accountability.

The following were the sectional Presidents of the 80th session of the congress :

Mathematics: Prof. A.M. Vaidya, Head of the Department of Mathematics, Gujarat University, Ahmedabad.

Statistics: Prof. B.K. Kale, former Head of the Department of Statistics, University of Poona, Pune.

Physics: Prof. Chanchal Kumar Majumdar, Director, S.N. Bose National Centre for Basic Sciences, Calcutta.

Chemistry: Prof. Sunil Kumar Roy, former Professor & Head, Chemistry Department, Patna University, Patna.

Bio-chemistry, Bio-physics and Molecular Biology: Prof. D.K. Chattoraj, Editor-in-chief, International Journal of Surface Science & Technology, New Delhi.

Material Sciences : Prof. S. Ranganathan, Professor of Physical Metallurgy, Indian Institute of Science, Bangalore.

Earth System Sciences : Prof. D.R. Gadekar, Head, Department of Geology, M.S. University of Baroda, Baroda.

Botany : Prof. R.S. Dwivedi, Centre of Advanced Study in Botany, Banaras Hindu University, Varanasi.

Zoology : Prof. P. Mohanty Hejmadi, Department of Zoology, Utkal University, Bhubaneswar.

Anthropology & Archaeology : Prof. N.K. Behura, Postgraduate Department of Anthropology, Utkal University, Bhubaneswar.

Medical & Veterinary Sciences : Prof. Ganga Prasad Sen, former Principal Scientist, Indian Veterinary Research Institute, Calcutta.

Agricultural Sciences : Dr. Srijib Gangopadhyay, Principal Scientist in National Agricultural Research Project, ICAR, New Delhi.

Physiology : Prof. S.K. Manchanda, former Head of the Department of Physiology, All India Institute of Medical Sciences, New Delhi.

Psychology & Educational Sciences : Dr. (Mrs) Anima Sen, Head of the Department of Psychology, University of Delhi, Delhi.

Engg. Science : Shri Ramadhar Jha, Superintending Engineer, M/s Hindustan Steel Works Construction Ltd., Durgapur.

Computer Science : Dr. Rattan K. Datta, India Meteorological Department, New Delhi.

Quality of Science and Technical Education

The Forum on Science Education and Research suggested that new links be forged between universities and national laboratories to improve the quality of science and technical education in the country. The forum felt that joint centres must be run by universities and national laboratories and large scale

funds provided to improve the infrastructural facilities in universities and colleges for this purpose.

The forum said in its recommendations that educational institutions may be given the task of skilled manpower and training to provide skilled science and technical services to the society. The capital intensive laboratory facilities centered at research and development institutions may be opened to the faculty members of universities and colleges, besides developing new teaching materials like programmed video cassettes and softwares to enrich the content of science education, which could be linked to frontier areas and science and technological innovations.

International collaborations in key areas could be an effective means of exposing the nation's resource personnel to new frontier area activities, the forum suggested.

Universities, which are presently poorly funded, must possess well-equipped laboratories as this is the base on which giant research development laboratories stand, the forum suggested and cautioned that further neglect would have harmful effects in the long run of the quality of research activities in applied areas.

To reach the masses in the rural sector, the spirit of science should be percolated through communication networks and other movements like Bharat Jan Vigyan Jatha, besides setting up village science centres and science clubs.

Science education and communication must be modelled properly so that projects of productivity in the key areas could be met by the turn of the century, the forum emphasised adding that laboratory to land projects, specially in the agriculture sector should be given preference to achieve the goals.

The forum called upon the scientists and technologists to address

themselves urgently to areas which are directly linked to economic activities at the grassroots level like problems related to health care and hygiene and family welfare.

A data base of people involved in the popularization of science and technology should be made available to all heads of research and development institutions, the forum stressed.

The forum also demanded the early review of the role of media in the dissemination of science information.

Biologists Heading for New Era

Biologists are heading for an era when genetics will be used to create humans with superior and desirable qualities, an Indian-born American genetic engineer said at the 80th Indian Science Congress which concluded recently in Goa.

Dr Krishna Dromamraju, President of the Texas based Foundation for Genetic Research, said that biotechnology would be directed at achieving such qualities as longevity, enhancing performance in sports and even higher intelligence.

Although most work on human gene therapy is now aimed at treating incurable diseases, in future biotechnology is likely to be used for positive goals or "positive eugenics", he said in a special congress lecture.

Dr Raju, who is a member of the US Government's Advisory Committee on Genetic Engineering which is responsible for clearing proposals for human gene therapy, said there had so far been no proposals for positive gene therapy as yet.

The committee clears about 40 proposals every year most involving pioneering procedures in human gene therapy which sometimes have also generated controversy. About 95% of the work is aimed at fighting cancer.

Dr. Raju said bio-technology was going to dominate science and technology during the 21st century, transforming our economy, lives and moral and ethical values in a fundamental way.

Dr. Raju said most gene therapy now underway was based on targeting somatic cells and have little influence on subsequent generations. But gene therapy involving germ cell would pose ethical and moral questions as it would lead to irrevocable alterations of the population's gene pool.

Success rates in human gene therapy have been low. The procedures are almost always tried out in patients with terminal illnesses and many patients die during therapy.

The intricate procedures involved in gene therapy are also very expensive. Some qualities scientists might want to introduce into humans through genetic engineering in the future would be greater resistance to radiation and greater endurance to long periods of space travel, he said.

Dr Raju said genetic procedures were sometimes unpredictable and controversial. One recent proposal involved introduction of genetically-engineered mice cells into brains of patients suffering from glioblastomas – incurable brain tumours.

Conservation of specific segments of the genome would provide ample desirable material for gene banks, transfer, grafting or other kinds of genetic manipulation. Estimates that sequencing the entire genetic structure in the human body would take over 20 years and upto \$10 billion might have been an over-estimate.

About 4,000 genes had been identified and it looks like the entire human structure would be sequenced in about four years. The issue of whether genetic procedures or mutations could be patented was

a major issue of debate in the USA and elsewhere, he added.

PG Courses in Public Health and Health Care Admn.

A programme specially designed to train personnel from the South Asian countries in health policy and management is proposed to be launched jointly in August this year by the University of North Carolina, USA, and the Jaipur based Indian Institute of Health Management Research (IIHMR).

Called the executive programme for South Asia, it has been designed keeping in view the requirements of the SAARC countries, stated Dr. Sagar C. Jain, Professor at the Department of Health Policy and Administration, University of North Carolina.

The programme, under which mid-career health professionals from various SAARC countries would be admitted, will lead to award of Postgraduate degrees in Master of Public Health and Master of Healthcare Administration by the University of North Carolina. Students will attend classes at the IIHMR in Jaipur as well as at Chapel Hill, USA.

University of North Carolina Vice-Chancellor for Graduate Studies Dr. Mary Sue Coleman, Graduate School Dean Prof. Henry H. Dearman and IIHMR Governing Board Chairman Mr. B.G. Deshmukh, stressed that the unique features of this programme were that it would cost Asian students half the expenditure which they would have to incur for studies abroad and, secondly, they would get training in an atmosphere and conditions that were more akin to those in their countries.

Interdisciplinary Scheme Faculty Lecture

Dr. Dharma R. Kodali from Cargil Inc., Central Research Minneapolis, USA recently delivered a lecture on "Infrared Micro- imaging

of Atherosclerotic Arteries" at the Department of Chemistry, Kurukshetra University. Dr. S. Arya, Vice-Chancellor, presided.

Dr. Kodali discussed at length the use of Micro FT-IR spectroscopy to probe the subcellular chemical composition of Atherosclerotic arterial walls and create three-dimensional images representing changes in the composition. The power of this novel technique to characterize the arterial lipids *in situ* was demonstrated by a number of illustrations.

Exams are Farce

Examinations have become a mere formality and a big farce and only less than five percent of teachers really teach students, reveals a research study, results of which were presented to the Indian Science Congress held in Panaji recently.

The centralised evaluation system has become meaningless. The examiner who once took more than a month to evaluate 200 answer books, now examines 300 to 400 copies in a week at centralised evaluation centres, the study says.

- The libraries in colleges have no books, the laboratories are without apparatus and chemicals because development fund taken from the students in spent on salary payment and other heads.

It has also revealed that only less than 10 percent of the students regularly attend classes.

The research paper submitted by Mr. Balbir Singh Bhasin, SGGs College, Patna Saheb, points out that after independence more than 130 committees, commissions and panels were constituted to form or finalise the education policy.

"Unfortunately all recommendations met pre-mature deaths and the sufferers were the poor students on whom experiments were conducted", the paper said.

The study has been conducted on the students of colleges and univer-

sities to get facts from the horse's mouth. The students were feeling the "direct strike of the whip of the present education and examination system on the their personality development", the paper said.

Mass Media in the 21st Century

Shri Pravinkant Reshamwala Institute of Journalism, in collaboration with the Indian Association of Mass Communication, New Delhi & KRIBHCO, Surat proposes to organise a National Convention on Mass Media in the 21st Century on February 26-28, 1993. The topics proposed to be discussed at the convention include (1) Print Media in 2000 A.D.; (2) Challenge from the Sky : Satellite Television; (3) Mass Media in Gujarat : Today and Tomorrow; (4) Promoting Total Literacy Campaign through Mass Media; (5) Emerging Horizons for Public Relations and Advertising; (6) Trends in Electronic Media; (7) Role of Rural Media in Social Change; and (8) National Integration : A Challenge to Mass Media.

Further details may be obtained from : Prof. Nanubhai Joshi, Organising Secretary, National Convention on Mass Media in the 21st Century, Shri Pravinkant Reshamwala Institute of Journalism, Dept. of Continuing Education & Extension Work, South Gujarat University, Surat - 395 007.

We Congratulate....

1. Dr. K.S. Chauhan who has been appointed Vice-Chancellor of the Rajendra Agricultural University, Pusa, Samastipur (Bihar).
 2. Dr. R.P.S. Tyagi who has been appointed Vice-Chancellor of the Himachal Pradesh Agricultural University, Palampur.
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News from Agricultural Universities

Low Cost and Non-Hazardous Agrotechniques

Utilisation of hazardous pesticides to control insect pests and diseases should be completely avoided and the cultural practices and biocides should be encouraged for production at commercial level so that the farmers can easily utilise the resources available at their door-steps, opined Dr. S. Gangopadhyay of the Indian Council of Agriculture Research (ICAR). He was delivering a lecture on 'Low cost and non-hazardous Agrotechniques for Agrarian Prosperity, at Goa University recently. Dr. Gangopadhyay said for the plant protection measures like bacterial leaf blight of rice, the crops could be protected with spraying of cowdung slurry (actinomyces and bacteriophage effect). He said, seed treatment with cowdung reduced diseases of rice and cotton.

Dr. Gangopadhyay said agrotechniques on the basis of organic farming concept should be encouraged and train the farmers to exploit natural resources and application to the field at proper time. The application of blue green algae and other bio-fertilizers are cheap and easily available, which could reduce the application of inorganic fertilizer of NPK.

He said, the conservation of water and slow moisture and proper tillage condition which involves very low cost should be attempted at every village level.

Dwelling on various possibilities to control pests for better yield, Dr. Gangopadhyay said, genetical methods which aimed at the manipulation of reproductive systems to cause destruction or alternation of pest populations have met with isolated success in case of insects. The sterile insect technique was a well established

method of insect control or eradication.

Mutation breeding for improvement of varieties is an important aspect and production of disease resistant varieties is an extension of this approach. "It is fairly well established now that mutation breeding could only be an adjunct to the unconventional breeding for genetic rectification of short-comings, of the simple inherited characters," he pointed out.

He also emphasised the need to develop genetic engineering. However, he said the first tangible effects of genetic engineering were traits like control of insect pests, plant diseases and weeds.

Dr. Gangopadhyay further said the Indian agrarian structure revealed the existence of four distinct sectors : Progressive entrepreneur farming based on capitalistic mode of production, self-cultivating the marginal-small and medium land owning peasants, share croppers and various kinds of tenants and subtenants, bondage and social and caste oppression, and the last sector comprising agriculture was the main stay and yet they have no land to till.

He said this agrarian structure would indicate the need for small farming technology. Green revolution, Dr. Gangopadhyay said, had increased the total foodgrain production from 30.8 million tonnes (1950-51) to 172.18 m tonnes (1988-89).

Dr. Gangopadhyay asserted that the time was ripe for farm scientists and the governments concerned to make an all out effort to promote low cost technologies for boosting the agricultural production and saving the country from imminent environmental hazards.

Development of Cotton Cultivation in Punjab

The Punjab farmers will get at least 500 crores more due to the increase in the support prices announced by the Government of India recently, said Mr. Balram Jakhar, Union Minister of Agriculture while presiding over a special meeting of concerned officers and experts of the Punjab Agricultural University to discuss the problems of cotton cultivation in Punjab. He emphasized that we must help the farmers to get remunerative price of their products. This can only be possible through maintaining the quality of products. He advised the Punjab Government to launch a special programme to provide quality seeds to the farmers. The Union Government will provide a subsidy of Rs. 250 per quintal for wheat seed and Rs. 400 per quintal for cotton seed for this purpose. He emphasized that diversification in agriculture could only be possible if our farmers produced products of good quality and the establishment of more processing units. He stated that Government of India had decided to spend Rs. 1000 crores for the development of agriculture which was only 25 crores previously. The Government of India also decided to give subsidy to the farmers for the purchase of farm machinery, the benefit of which would be more for the farmers of Punjab. He emphasized the introduction of drip irrigation which would not only save irrigation water but also improve the quality of products. He disclosed that there would be a substantial increase in the support price of cotton in the next season. On a demand by the officers to increase the export quota of cotton for Punjab, the Minister agreed to do his best to increase this quota. He further stated that the Punjab state would also be allowed

to export durum wheat which would help Punjab farmers to get better price of wheat. He emphasized that efforts should be made to conduct research for the development of farm machinery suitable to Indian conditions and also developing varieties according to the needs of the industry.

Shri S.P. Oswal while representing the industry emphasized that varietal uniformity and product of good quality were required for competing with international market. Mr. U.P.S. Gill from CCI disclosed that CCI had already procured three lakh bales of cotton from Punjab for export. He emphasized that export quota for Punjab might be enhanced to check the crushing of price. Mr. R.N. Gupta, Financial Commissioner (Development) stated that after a through discussion it had been decided to constitute a Standing Committee on cotton development under the Chairmanship of Vice-Chancellor, PAU. This committee would suggest various ways and means for the development of cotton cultivation in the state. He further stated that MARKFED would set up a foundation to financially help the research on cotton. It was also decided to associate a member from the industry on the Variety Approval Committee of the state. The State Department of Agriculture would launch an intensive programme for procuring good quality seed of cotton through the involvement of progressive farmers. The Markfed would also help State Seed Corporation to expand their programme of providing certified seed to the farmers. A request was made to the Minister for handing over Central Seed Farm at Ladowal to the State Government for this purpose.

Dr. K.S. Gill, Vice-Chancellor, PAU, stated that university had

made a good progress in producing hybrid varieties of various crops. Two hybrid varieties of cotton, namely, *Ranjit* and *Fateh*, have already been developed which were being tested at farmers' fields. With the establishment of new Seed Farm at Faridkot, University was able to meet the full requirement of State Government for providing foundation seeds. He further disclosed that spray pump had already been developed by the engineers of the university and efforts were also being made to prepare a cotton picker. The university would help in standardising local varieties of cotton, so as to improve the quality.

Environment and Management for Sustainable Productivity

A two-day National Symposium on Stress Environment and Management for Sustainable Productivity was recently held at Chaudhary Charan Singh Haryana Agricultural University under the auspices of Indian Society of Agro Physics. Dr. J.S. Kanwar, Ex-Dy. Director General, ICRISAT, inaugurated the symposium. In his address Dr. Kanwar stressed about the clarity in targets and goals to be achieved and to improve water and nutrient management under stressed environment.

Dr. B.P. Childyal, President of the Society, in his presidential address highlighted various stresses including biophysical, socio-economic and physical environment etc. for sustainable productivity.

The papers presented at the symposium highlighted the increased efficiency of crops to boost production by better crops, water soil and environment under stressed environment on sustainable basis. In his paper Dr. G.G.B. Manskey from Germany expressed his desire to develop

nutrient efficient wheat varieties in collaboration with CCSHAU.

Soil Management Technologies

A three-day annual workshop of All India Coordinated Research Projects on Improvement of Physical Conditions, was recently held at Chaudhary Charan Singh Haryana Agricultural University. Dr. I.P. Abrol, Dy. Director General (Soils, Agronomy and Agro-Forestry), ICAR, inaugurated the workshop.

The 'Chiesel Technology' developed for loosening of sub-surface layers having high mechanical impedance at shallow depth to root growth and water infiltration were discussed. The workshop also discussed the results of the test conducted on the farmers fields of the soil management technologies developed for different problematic areas.

The delegates felt that the 'seed-line mulch technology' developed to reduce crust formation encouraged the seedline emergence of cotton, pearl millet (Bajra) and jute crops.

It was agreed that the 'compaction technology' developed to reduce water nutrients losses from highly permeable sandy and loamy sand, soils and irrigation requirement of crops increased the yield of pearl millet (Bajra), mustard, cowpea, guar and wheat crops and reduced the irrigation requirement of wheat crop in Rajasthan and Haryana. The delegates arrived at consensus that the 'crop residue recycling technology' developed to reduce hardening of red sandy loam 'Chalka soils' and fine textured puddled soils by the incorporation of slow decomposing crop residues such as rice husk, rice straw, powdered groundnut shells and coir dust increased the yields of sorghum, groundnut, rice, lentil and wheat crops in Andhra Pradesh, Tamil Nadu and Bihar states.

Mapping Technovations in Post Harvest Engineering and Technology

Dr. Khem Singh Gill, Vice-Chancellor of Punjab Agricultural University recently inaugurated the one-day Seminar on Mapping Technovations in Post Harvest Engineering and Technologies held at the Central Institute of Post Harvest Engineering and Technology, Ludhiana. In his address Dr. Gill emphasized on the importance of PHT in view of the increasing production, marketable surpluses and the need for value addition and better returns to the farmers. Quality should be most important consideration in Food Processing. Products like breakfast cereals should be developed.

Dr. S.D. Khepar, Dean, COAE, chaired the session and stressed on integrated approach to strengthen processing at rural areas. Dr. Jai Singh, OSD, CIPHET highlighted the objectives of the institute. CIPHET has been established under the aegis of ICAR. Mandate of the Institute is to act as a nodal institute for lead researches in the area of post harvest engineering & technology appropriate at rural threshold, development of rural agro-processing industrial models, pilot plant studies, industrial liaison, technology transfer, training and consultancy and national and international cooperations. An overview of develop-

ments in equipments, processing and products over the past decades were presented by Dr. Jai Singh. Several constructive suggestions for perspective scientific programme to be followed by CIPHET were made during the day long discussions.

Tanzanian Delegation at HAU

Mr. A.M.R. Mwamane, Second Secretary, Tanzanian High Commission, New Delhi, alongwith three senior officers from Tanzanian Ministry of Science and Technology and Higher Education recently visited the Chaudhary Charan Singh Haryana Agricultural University (CCSHAU) to study the facilities available there for higher education in the field of agriculture and allied areas. The visiting team saw the constituent colleges, laboratories, research farm and Directorates of the university and held detailed discussions with the experts on the important activities undertaken at the university currently.

In a meeting with the Registrar, Ms Shashi Gulati, and Shri Vinay Kumar, Officer on Special Duty, Mr. Mwamane lauded the standard of work and the infrastructure of the university. He said that Tanzania would send its students to CCSHAU for higher agricultural education from the next academic session.

News from UGC

Countrywide Classroom Programme

Between 15th February to 20th February, 1993 the following schedule of telecast on higher education through INSAT-1D under the auspices of the University Grants Commission will be observed. The programme is presented in two sets of one hour duration each every day from 1.00 p.m. to 2.00 p.m. and 4.00 p.m. to 5.00 p.m. The programme is

available on the TV Network throughout the country.

1st Transmission

1.00 p.m. to 2.00 p.m.

15.2.93

"Origins of Quantum Theory : From Planck to Bose - II"

"Small Steps to Big Gains"

"Vermicompost – I
The Might of the Small"

16.2.93

"The Distribution of Molecular
Speeds"

"Child : Growth and Develop-
ment – II"

"Eye Problems and Prevention"

"Images of Girl Child"

17.2.93

"Tentmaking Bats"

"Fastening Devices"

"The Great Pyramid – A Tomb or
an Observatory"

18.2.93

"Electronics – III
Transistor Characteristics"

"English Studies in India :
Problems and Prospects – II"

"Martial Art of Orissa
(Paik Dance) – II"

19.2.93

"Introducing Forensic Science"

"By the People – III
Making a Decision and Choosing
a Candidate"

20.2.93

"Theatre Exercises"

"INNOVATION : Getting there
from here"

"Week Ahead"

Ind Transmission

4.00 p.m. to 5.00 p.m.

15.2.93

"Scintigraphy"

"General Agreement on Trade &
Tariff – I"

"Management as a Profession"

16.2.93

"The Transition Metals"

"Children Eye care – II"

"AIDS"

17.2.93

"Energy Management"

"Burial Mound at Sekta"

"New Techniques in fish Culture"

18.2.93

"Magmatic Residues and
Knowledge of Volcanoes"

"Rocks"

"Modern Telugu Poetry " An In-
troduction"

19.2.93

"Tall fathers and short sons – I
Regression"

"Eutrophication"

"Imbibing Global Ecology – A
Unique Experiment in learning"

20.2.93

"GRIPS : Theatre with a Pur-
pose"

"Form and Idea – I"

"The Week Ahead"

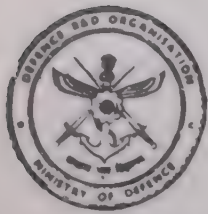


INDIAN STATISTICAL INSTITUTE
203 B.T.Road, Calcutta - 700035
ADMISSION NOTICE 1
SESSION : 1993-94

Invites applications for the following Courses/Fellowships
(1) 3-year B.Stat. (Hons.) (2) 2-year M.Stat. (3) 2-year
M.Tech. in Computer Science (4) 2-year M.Tech. in Qual-
ity, Reliability and Operations Research (5) Junior Research
Fellowships in : Statistics, Mathematics, Economics, Com-
puter Science, Electronic Communication Sciences, Theo-
retical Computer Science, Fluid Mechanics, Applied Mathe-
matics, Theoretical Physics, Earth Sciences, Chemistry and
Physiology (6) 2-year Specialist Development Programme in
SQC and OR (7) 1-year Certificate/2-year Diploma Course
on Operation and Programming of Automatic Data Process-
ing Equipment.

A MORE DETAILED ADVERTISEMENT WAS PUBLISHED
IN THIS PAPER ON 31.1.1993. Complete information on
Scope, Duration, Eligibility, Stipend/Tuition fee is available
in the prospectus. Prospectus and application form can be
obtained from the Dean of Studies, Indian Statistical Insti-
tute, 203 Barrackpore Trunk Road, Calcutta -700 035, by
paying an amount of Rs.40/- in cash (between 11.00 a.m.
and 2.00 p.m. on working days from Monday to Friday)
or by bank draft in favour of "Indian Statistical Institute"
payable at Calcutta (proper). Postal orders, money orders
and cheques will not be accepted.

Last date for receiving requests for application forms :
Monday, 1 March 1993.



MINISTRY OF DEFENCE DEFENCE RESEARCH AND DEVELOPMENT ORGANISATION (DRDO)

DRDO invites applications for the following posts:—

Advt. NO. 033/RAC/93

SCIENTIST 'E' : (Rs. 4500-5700)—1 Post.

Centre for Air Borne System, Bangalore—1 Post

Item No. 1 : 1 Post—ESSENTIAL QUALIFICATIONS : (i) At least second class Bachelor's degree in Electrical/Electronics/Telecommunication Engineering or Master's degree in Physics with specialisation in Electronics/Wireless from a recognised university or equivalent. (ii) Ten years research, design, development and production experience in the field of Radar/Digital Electronics/Communication Engineering.

DESIRABLE QUALIFICATIONS : (i) M.Tech/Ph.D in Radar related field. (ii) Experience in System Analysis/Computer Simulation.

SCIENTIST 'D' : (Rs. 3700-5000)—4 Posts.

GTRE, Bangalore—2 Posts

Item No. 2 : 1 Post—ESSENTIAL QUALIFICATIONS : (i) At least second class Bachelor's degree in Mechanical Engineering from a recognised university or equivalent. (ii) Eight years experience in research or industry related to Aerospace Engineering in the areas of three dimensional steady and unsteady flows in turbo machines including knowledge of latest computational techniques for predicting flow through turbo machines.

DESIRABLE QUALIFICATIONS : (a) Master's/Doctorate degree in Engineering related to flows in turbo machines. (b) Familiarity with the advanced techniques for the measurement of three dimensional flows with high level of turbulence.

Item No. 3 : 1 Post—ESSENTIAL QUALIFICATIONS : (i) At least second class Bachelor's degree in Mechanical Engineering from a recognised university or equivalent. (ii) Eight years research/design/development experience in the field of Aerospace Engineering in the areas of Experimental Stress Analysis of Gas Turbine Components, Finite Element and Boundary Element methods using modern computational software packages and systems, Fatigue and Fracture Mechanics and its application in the Evaluation of Fatigue life.

DESIRABLE QUALIFICATIONS : (a) Master's/Doctorate degree in Mechanical/ Aerospace Engineering (b) Knowledge of Metal Matrix Composites (MMC's).

DRDL, Hyderabad

Item No. 4 : 1 Post—ESSENTIAL QUALIFICATIONS : (i) At least second class Bachelor's degree in Chemical/Aeronautical/Aerospace Engineering from a recognised university or equivalent. (ii) Eight years experience in Research and development of solid propellants.

DESIRABLE QUALIFICATIONS : (a) Master's degree/Doctorate degree in Chemical/Aeronautical/Aerospace/Guided Missile Engineering. (b) R&D experience in propellants for Missiles.

DMRL, Hyderabad

Item No. 5 : 1 Post—ESSENTIAL QUALIFICATIONS : (i) At least second class Bachelor's degree in Metallurgical Engineering or second class Master's degree in Material Science from a recognised university or equivalent. (ii) Eight years' research and development experience in the area of transformation and analysis of alloys.

DESIRABLE QUALIFICATIONS : Master's/Doctorate degree in metallurgy/ Material Science.

SCIENTIST 'C' : (Rs. 3000-4500)—7 Posts.

Gas Turbine Research Establishment, Bangalore—1 Post

Item No. 6 : 1 Post—ESSENTIAL QUALIFICATIONS : (i) At least second class Bachelor's degree in Mechanical/Civil Engineering from a recognised university or equivalent. (ii) Four years' research, design and development experience in the field of Aerospace Engineering related to (a) Unified viscoplastic constitutive models for gas turbine applications, (b) Thermo-mechanical fatigue behaviour of high temperature materials (c) Stress analysis using finite element technique (d) Life prediction of gas turbine components and (e) Mechanical and Thermal fatigue testing and analysis thereof.

DESIRABLE QUALIFICATIONS : Master's/Doctorate degree in Aerospace Engineering.

Defence Metallurgical Research Laboratory, Hyderabad

Item No. 7 : 1 Post—ESSENTIAL QUALIFICATIONS : (i) At least second class Bachelor's degree in metallurgy/Ceramic Engineering or Second Class Master's degree in Material Science/Physics from a recognised university or equivalent. (ii) Four years research experience in the field of characterisation of materials by X-ray diffraction.

DESIRABLE QUALIFICATIONS : Doctorate degree in Physics/Material Science or Master's degree in Metallurgy/Ceramic Engineering.

Item No. 8 : 1 Post—ESSENTIAL QUALIFICATIONS : (i) At least second class Bachelor's degree in Metallurgy or second class Master's degree in Material Science from a recognised university or equivalent. (ii) Four years' research and development experience in the field of characterisation of surface and interfaces by using advanced Analytical Techniques.

DESIRABLE QUALIFICATIONS : Master's/Doctorate degree in Metallurgy/ Material Science.

Item No. 9 : 1 Post—ESSENTIAL QUALIFICATIONS : (i) At least second class Bachelor's degree in Metallurgical Engineering or second class Master's degree in Physics from a recognised university or equivalent. (ii) Four years' research and development experience in the field of Thermodynamics of solid solution and intermetallics.

DESIRABLE QUALIFICATIONS : (a) Master's/Doctorate degree in Physics/Metallurgy. (b) Experience in Transmission Electron Microscopy.

Institute of Nuclear Medicines & Allied Sciences, Delhi

Item No. 10 : 1 Post—ESSENTIAL QUALIFICATIONS : (i) A medical qualification included in first schedule or second schedule or the part II of the third schedule of the IMC Act, 1956. Holders of medical qualification included in Part II of the said third schedule should also fulfil the conditions specified in sub-section (3) of section 13 of the said Act. (ii) M.D. in Radiology (Radio-diagnosis). (iii) Three years practical experience in the above medical field or medical research or medical education.

DESIRABLE QUALIFICATIONS : (a) Experience in Radio diagnostic techniques such as MRI, Ultrasound and CT Scan. (b) Experience in cardiovascular Neuro-radiology and Interventional Radiology.

Centre for Artificial Intelligence & Robotics, Bangalore

Item No. 11 : 2 Posts—ESSENTIAL QUALIFICATIONS : (i) At least second class Bachelor's degree in Electronics/Telecommunication/Electrical Engineering from a recognised university or equivalent. (ii) Four years experience in Research/design/development in image processing and computer vision.

DESIRABLE QUALIFICATIONS : Master's/Doctorate degree in relevant discipline of Engineering with specialisation in the area of Computer Vision and Image Processing.

SCIENTIST 'B' : (Rs. 2200-4800)—21 Post (UR-6, SC-8, ST 7).

Item No. 12 : 1 Post (UR)—ESSENTIAL QUALIFICATIONS : At least second class Bachelor's degree in Mechanical Engineering from a recognised university or equivalent.

DESIRABLE QUALIFICATIONS : (a) Master's degree in Mechanical Engineering. (b) Experience in Image Processing and Computer Vision.

Item No. 13 : 1 Post (UR)—ESSENTIAL QUALIFICATIONS : At least second class Bachelor's degree in Electrical/Electronics/Communication Engineering from a recognised university or equivalent.

DESIRABLE QUALIFICATIONS : (a) Master's degree in Electrical/ Electronics/ Communication/ Aeronautical Engineering. (b) Flying experience in a Powered aircraft.

Item No. 14 : 2 Posts (UR-1, SC-1)—ESSENTIAL QUALIFICATIONS : At least second class Bachelor's degree in Mechanical Engineering from a recognised university or equivalent.

DESIRABLE QUALIFICATIONS : (a) Master's degree in Engineering in the relevant field. (b) Research and development or teaching experience in the field of Mechanical Engineering.

Item No. 15 : 1 Post (UR)—ESSENTIAL QUALIFICATIONS : At least second class Bachelor's degree in Electrical Engineering from a recognised university or equivalent.

DESIRABLE QUALIFICATIONS : (a) Master's degree in Engineering in the relevant field. (b) Research and development or teaching experience in the field of Electrical Engineering.

Item No. 16 : 1 Post (UR)—ESSENTIAL QUALIFICATIONS : At least second class Bachelor's degree in Metallurgy or second class Master's degree in Material Science from a recognised university or equivalent.

DESIRABLE QUALIFICATIONS : Master's/Doctorate degree in Metallurgy/ Material Science.

Item No. 17 : 2 Posts (UR-1, ST-1)—ESSENTIAL QUALIFICATIONS : At least second class Bachelor's degree in Electronics/Electrical Engineering with specialisation in Microwave Components and Technology from a recognised university or equivalent.

DESIRABLE QUALIFICATIONS : Master's degree in Microwave Engineering.

THE FOLLOWING POSTS ARE BEING ADVERTISED FOR THE FOURTH TIME SO AS TO FILL UP RESERVED POSTS OUT OF CANDIDATES BELONGING TO SCHEDULED CASTE/ TRIBE COMMUNITY.

Item No. 18 : 1 Post (ST)—ESSENTIAL QUALIFICATIONS : At least second class Bachelor's degree in Electronics Engineering from a recognised university or equivalent.

DESIRABLE QUALIFICATIONS : Master's degree in Electronics Engineering with specialisation in Computer Networks/Microprocessors/ Digital Communication/ Sensors/Monitoring devices/Microwaves.

Item No. 19 : 1 Post (SC)—ESSENTIAL QUALIFICATIONS : (i) At least second class Master's degree in Science subject. (ii) Advanced Diploma or degree in French/Chinese language from a recognised university or equivalent.

DESIRABLE QUALIFICATIONS : Flair for interpretation of French/ Chinese language into English or vice versa.

Item No. 20 : 1 Post (ST)—ESSENTIAL QUALIFICATIONS : At least second class Bachelor's degree in Naval Architecture from a recognised university or equivalent.

DESIRABLE QUALIFICATIONS : Master's degree in Naval Architecture.

Item No. 21 : 1 Post (SC)—ESSENTIAL QUALIFICATIONS : At least second class Master's degree in Pure/Applied Physics (Non—Electronics) or Meteorology (weather forecasting) from a recognised university or equivalent.

DESIRABLE QUALIFICATIONS : Experience in Numerical Weather Forecast Modelling.

Item No. 22 : 1 Post (ST)—ESSENTIAL QUALIFICATIONS : At least second class Bachelor's degree in Aeronautical Engineering from a recognised university or equivalent.

DESIRABLE QUALIFICATIONS : (i) Master's degree in Aeronautical Engineering with specialisation in propulsion of Flight Mechanics/Aerodynamics. (ii) Working knowledge of computers and programming languages.

Item No. 23 : 1 Post (ST)—ESSENTIAL QUALIFICATIONS : At least second class Master's degree in Psychology with specialisation in Clinical/ Communication/ Social/ Experimental Psychology from a recognised university or equivalent.

DESIRABLE QUALIFICATIONS : (i) Ph.D degree in Psychology; (ii) Flair for writing audio-visual entertainment scripts.

THE FOLLOWING POST IS BEING ADVERTISED FOR THE THIRD TIME SO AS TO FILL UP RESERVED POSTS OF OUT CANDIDATES BELONGING TO SCHEDULED CASTE COMMUNITIES.

Item No. 24 : 1 Post (SC)—ESSENTIAL QUALIFICATIONS : At least second class Master's degree in Veterinary Science from a recognised university or equivalent.

DESIRABLE QUALIFICATIONS : Ph.D degree in animal genetics/animal breeding. (ii) R&D experience in up-keep and maintenance of animal house for rodents and primates.

THE FOLLOWING POSTS ARE BEING ADVERTISED FOR THE SECOND TIME SO AS TO FILL UP RESERVED POSTS OUT OF CANDIDATES BELONGING TO SCHEDULED CASTES AND SCHEDULED TRIBES COMMUNITIES.

Item No. 25 : 1 Post (SC)—ESSENTIAL QUALIFICATIONS : At least second class Master's degree in Physiology with specialisation in human/ animal physiology from a recognised university or equivalent.

DESIRABLE QUALIFICATIONS : (a) Doctorate degree in Physiology or related discipline. (b) Research experience in neuro-physiology/ Electro-Physiology

Item No. 26 : 3 Posts (SC-2, ST-1)—ESSENTIAL QUALIFICATIONS : At least second class Bachelor's degree in Instrumentation Engineering/ Technology from a recognised university or equivalent.

DESIRABLE QUALIFICATIONS : (a) Master's degree in Instrumentation Engineering/ Technology. (b) Experience in Fabrication/Maintenance or Analytical or Engineering Instruments.

Item No. 27 : 1 Post (SC)—ESSENTIAL QUALIFICATIONS : At least second class Bachelor's degree in Electrical Engineering from a recognised university or equivalent.

DESIRABLE QUALIFICATIONS : Master's degree in Electrical Engineering.

Item No. 28 : 1 Post (ST)—ESSENTIAL QUALIFICATIONS : At least second class Master's degree in Physics with specialisation in Electronics from a recognised university or equivalent.

DESIRABLE QUALIFICATIONS : (a) Doctorate degree in the related field. (b) Knowledge of Electro-Optics.

FOR ALL THE ABOVE POSTS KNOWLEDGE OF FRENCH, GERMAN, RUSSIAN, JAPANESE, CHINESE WILL BE A DESIRABLE QUALIFICATION.

GENERAL CONDITIONS

1. Promotion Prospects : DRDO offers excellent opportunities for career advancement as Scientists. Result-oriented motivated scientists can look forward to promotions to following grades of scientists:

(i) Scientist 'C' : Rs. 3000-4500, (ii) Scientist 'D' : Rs. 3700-5000, (iii) Scientist 'E' : Rs. 4500-5700, (iv) Scientist 'F' : Rs. 5100-6300, (v) Scientist 'G' : Rs. 5900-7300.

2. Higher starting salary may be granted to the candidates whose performance is exceptionally brilliant in the interview.

3. Age Limits : (i) For Scientist 'B' : Not exceeding 28 years'. (ii) For Scientist 'C' not exceeding 35 years'. (iii) For Scientist 'D' and Scientist 'E' not exceeding 45 years'. Age is relaxable by 5 years' in case of Govt. servants and those belonging to Scheduled Caste and Scheduled Tribes communities. Crucial date for determining age is 22 Feb 1993.

4. Method of applying : Neatly typewritten applications should be sent to **Director, Recruitment & Assessment Centre, Lucknow Road, Timarpur, Delhi-110 054** preferably by registered cover, superscribed "Applications for the post of Scientists _____" Item No. _____ on plain paper in the prescribed format (reproduced below) accompanied by a crossed non-refundable Postal Order of the value of Rs. 8/- drawn in favour of Senior Accounts Officer, Recruitment & Assessment Centre, DRDO, payable at New Delhi. There is no fee for SC/ST candidates. **Last date of receipt of applications is 22 Feb 1993.** In respect of candidates from Andaman & Nicobar Islands, Lakshadweep and abroad, **last date of receipt of applications is 08 Mar 1993.**

5. Persons called for interview would be reimbursed actual train/bus fare by shortest route limited to second class rail fare from the normal place of residence to the place of interview.

6. Only Indian nationals need apply.

7. Candidates should send applications on the plain paper in the format given below duly typed accompanied with two self-addressed unstamped envelopes.

8. One copy of recent passport size photograph should be pasted on right hand corner of the first page of the application.

9. Attested copies of certificates/testimonials should be attached to the application form. Self attested copies will be accepted. **NO ORIGINALS SHOULD BE FORWARDED.**

10. Candidates will have to produce original certificates at the time of interview.

11. Incomplete applications or those received late will be rejected and no correspondence would be entertained in this regard.

12. The prescribed Essential Qualifications are the bare minimum and the mere possession of the same does not entitle candidates to be called for interview. Where the number of applications received in response to an advertisement is large and it will not be convenient or possible for the Recruitment & Assessment Centre (RAC) to interview all these candidates, the RAC may restrict the number of candidates for interview to a reasonable limit on the basis of qualifications and experience higher than the minimum prescribed in the advertisement or by holding a screening test. No TA is admissible in case a written test is held.

13. *Candidates working in Government/Public Sector Undertakings/ Autonomous Organisations must apply through proper channel. They shall not be interviewed if they fail to produce a 'No Objection' Certificate from their employer at the time of interview.*

14. Candidates desirous of applying for more than one post may apply separately for posts indicating item No. of the posts.

15. Candidates on appointment will have the opportunity to carry out PhD with external registration and may be sponsored for doing M.Tech.
16. Opportunities are also available for study leave for carrying out higher studies abroad.
17. DRDS Officers may be sponsored for training abroad.
18. Though initial place of posting is indicated against some of the posts, yet candidates have the liability to serve anywhere in India.
19. Handwritten applications will not be entertained.
20. Number of posts against each item is tentative and may vary.
21. All extra sheets used by the candidates MUST be duly authenticated by them.

22. **CANVASSING IN ANY FORM WILL MEAN DISQUALIFICATION.**

PROFORMA APPLICATION (Use A-4 size 21 x 30 cm of paper)

Application for the post of Scientist
Item No. * (To be indicated)

1. Advertisement No
2. Item No
3. Details of Postal Order(s) No, Date and Amount
4. Name in full (Shri/Smt/Km)
(in block letters)
5. (a) Date of Birth (in Christian era in figures)
(b) Age as on 22 Feb 1993
6. Nationality
7. Marital Status
8. Father's/Husband's name
9. Address for correspondence
10. Permanent Address (in block letters with pin code)
11. Nearest Railway Station
12. Whether belong to SC/ST (if yes, attach certificate)
13. Educational qualifications

Affix Passport
size latest
Photograph

Sr. No	Exam Passed	University/Institution/Board	Year of Passing	Subjects taken	Percentage of Marks	Division
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* In chronological order from X Standard (SSLC/HS/HSC) onwards

14. Have you qualified NET/GATE Examination Yes/No
(a) If yes, please indicate year of passing
15. Professional Training

Organisation	From	Period To	Details of Training
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16. Employment Record

Name & address of emp-loyer	Period of service from To	Designation of the post held/ Name of Estt.	Scale of pay of each post	Detailed description of *work	Reason for leaving
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* Attach separate signed sheet(s), if necessary.

17. Present Basic Pay
Total emoluments
Salary expected
18. (a) Are you a Central/State Govt Servant
(b) If not, whether an employee of public sector undertaking/ autonomous body/Private body
19. Minimum joining time required
20. Resume of research work/experience, if any (Attach separate signed sheet(s), if necessary)
21. No. of papers published (Give details in separate signed sheet(s))
22. Field of special interest
23. Are you under any contractual obligations to serve Central/State Govt/Any other public sector undertaking or Autonomous body and if so, give details.
24. Details of relatives already employed in DRDO

Name of Relatives	Relationship	Lab/Estt. in which employed	Post Held
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25. Have you applied for any post in DRDO during the past two years? If yes, give particulars :

Sr.	No. and Date of Advt	Name of Post Discipline	Date of interview	Remarks
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26. Any other information you may wish to add (use separate sheet if necessary).

27. Declaration :

I declare that the foregoing information is correct and complete to the best of my knowledge and belief and nothing has been concealed/distorted. If at any time, I am found to have concealed/distorted any material information, my appointment shall be liable to summary termination without notice. I will, if and when required, take up duty in the discharge of government assignments anywhere in India.

Place :

Date :

.....
Signature of Candidate

davp 686(463)92

Vignettes in Physics

G. Venkataraman, Director, Advanced Numerical Research and Analysis Group, DRDO, Hyderabad. He was awarded the Sir C.V. Raman prize by the University Grants Commission in 1979, and was Jawaharlal Nehru Fellow from 1984 to 1986. In 1991 he was honoured with the Padma Shri.

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G.B. PANT UNIVERSITY OF AGRICULTURE & TECHNOLOGY

PANTNAGAR-263145

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4a p 902/4-93

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2. A Rapid Assessment of Biodiversity in Mehao Wildlife Sanctuary (Mishmi Hills : Arunachal Pradesh) through Remote Sensing and Geographic Information Systems (2 Years) : 1 Junior Research Fellow; 1 EDP Assistant.
3. Keoladeo National Park Ecosystem Modelling and Simulation Studies (2 Years) : 1 Programmer; 1 EDP Assistant.
4. Impact of Development Projects on the Fish Diversity of the Western Ghats (3 Years) : 1 Junior Research Fellow.
5. Indian Avifauna : National Database (2 Years) : 1 Research Associate; 1 Programmer; 1 EDP Assistant.
6. Breeding Strategies of Birds in a Tropical Moist Deciduous Forest at Siruvani, Coimbatore (2 Years) : 2 Junior Research Fellows.
7. Monitoring of Keoladeo National Park Ecosystem (2.5 Years) : 3 Junior Research Fellows.

Candidates selected will be assigned to the above projects and their appointments are strictly co-terminus with the concerned projects.

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Research Associate : Ph.D in Ornithology.

Junior Research Fellow : M.Sc. in biological or environmental sciences.

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Research Associate : Negotiable between Rs. 2200 and Rs. 3700 based on experience and HRA as applicable.

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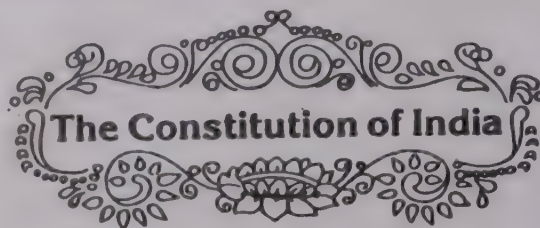
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Selection Procedure :

Research Associate, Programmers and EDP Assistants would be selected on the basis of interview. Junior Research Fellows would be selected based on a written test and interview. Those who have cleared JET need not appear for written test. However, written tests and interviews would be conducted at Coimbatore.

Applications addressed to the Director should be sent on plain paper to reach on or before 15.2.1993 with the following : (1) Name (2) Nationality (3) Age and date of birth (4) Educational qualifications starting with school leaving certificate, University or Board, subjects, Marks in percentage or Grades with equivalent percentage of marks (5) Experience (6) Signature of the candidate. (7) A passport size photograph, signed at the back. Copies of marksheets and degree certificates should be attached. Originals should not be sent with the application.



The Constitution of India

Preamble

"WE THE PEOPLE OF INDIA, having solemnly resolved to constitute India into a SOVEREIGN SOCIALIST SECULAR DEMOCRATIC REPUBLIC and to secure to all its citizens..."

सर्व धर्म समभाव

Sarva Dharma Samabhav

मित्रस्य या चक्षुषा सर्वाणि भूतानि समीक्षन्ताम् ।
मित्रस्याहं चक्षुषा सर्वाणि भूतानि समीक्षे ।
मित्रस्य चक्षुषा समीक्षामहे ।।

Yajurveda .(कृ. 38-18)

Equal respect for all religions.
This is the ethos of India.
And it runs like a thread in
all our spiritual thought.

The secular outlook is our safeguard.
And it is enshrined in our Constitution.
Let us rededicate ourselves to uphold
this principle.

لَا يُؤْمِنُ أَحَدُكُمْ حَتَّى يَكُونَ
لِأَخِيهِ مَا يَكُونُ لِنَفْسِهِ

(Hadith.)

Treat others exactly
as you would like
to have them treat you.

(Luke 6,31)

ਦੇਹਰਾ ਮਸੀਤ ਸੋਈ, ਪੁਰਾ ਐ ਠਾਕਰ ਓਹੀ,
ਮਾਨੁਸ ਸਭੇਕ, ਪੇ ਅਨੇਕ ਕੋ ਪ੍ਰਭਾਵ ਹੈ ।
.....
ਅਠਹ ਅਭੇਖ ਸੋਈ, ਪੁਰਾਨ ਐ ਕੁਰਾਨ ਓਹੀ,
ਏਕ ਹੀ ਸਰੂਪ ਸਭੇ ਏਕ ਹੀ ਬਣਾਵ ਹੈ ।

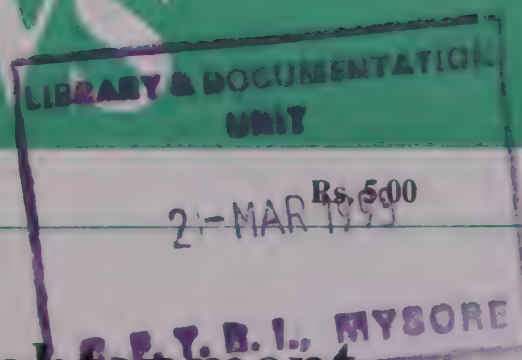
Guru Gobind Singh

SECULARISM STRENGTH OF OUR REPUBLIC

University News

ISSN - 0566-2257

MONDAY, FEBRUARY 8, 1993



Universities as Beacons of Enlightenment

Educational Reform : A Perspective

Standards in Higher Education

UGC Funding : Some Suggestions

Effective Utilization of Periodicals Budget

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UNIVERSITY NEWS

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IN THIS ISSUE

Educational Reform : A Perspective	4
Strategies to Raise Standards in Higher Education	6
UGC Funding : Some Suggestions	8
Effective Utilization of Periodicals Budget	9
Campus News	
All India Commerce Conference	12
Science Park and Planetarium at Burdwan	13
Refresher Course in Sanskrit, Pali and Prakrit	13
Fellowship for Research in Computer Vision	14
Agriculture	
Sir Chhotu Ram Memorial Lecture	15
Agricultural Varsity at Imphal	16
News from UGC	
Countrywide Classroom Programme	16
East Zone Inter-University Youth Festival	18
Research in Progress	20
Current Documentation in Education	21
Classified Advertisements	25

Opinions expressed in the articles are those of the contributors and do not necessarily reflect the policies of the Association.

Editor :
SUTINDER SINGH

Universities as Beacons of Enlightenment

K. Ventata Reddy*

Addressing the tenth convocation of the Kakatiya University, Dr. Manmohan Singh, the Union Finance Minister, said, "we are in uncharted waters and we need a beacon of enlightenment". And, he was hopeful that universities would function as beacons of enlightenment (The Hindu, 6 September, 1992). He made a fervent appeal to the university teachers and students to be sensitive to the poor and weak to make their service a part of human values. Furthermore, he wanted the universities to play a meaningful role "with an abiding concern for the well-being of the under-privileged weak and poor" by recapturing the spirit of idealism which inspired our people during the freedom struggle.

What the conscientious Union Minister sought to drive home to us was to make higher education purposeful and socially relevant whereby the universities in the country could serve as beacon lights of enlightenment to the toiling masses in the community.

The universities in India, for quite long, remained isolated citadels of higher learning in which the academic elite worked as arm-chair philosophers and lucky-go-happy thinkers, though they did try to present some working models for the community to emulate. They stayed alienated from the community. The output of these universities in terms of the cognition of reality and students was poor and weak in developing fuller rapport with the day-to-day affairs of life. The students in their life career became a distinct elite class to inherit the power structure of the older generation.

Presently, the universities, run on the tax payers' money, are facilities for the upward social and economic mobility of individual students who can afford to enter their portals. Except for the chosen few, the general public, as a whole, is not benefited by the university system. Though 80% of our population lives in the villages and forms the basis of progress of culture, though civilization and economics depend to a large extent on the rural scene, the education system, more so at the university level, does not make the students know and feel one with the toiling rural masses.

A time has come when the universities should play a greater role in solving the problems of the community where they are situated and of their command area. The new generation of teachers and students needs to be exposed to the rural economy and its problems to be able to bridge the widening gap between the urban and rural economies.

The expectations involved in higher education are, therefore, far and wide in terms of ends-means relationship, commencing from internal transformation to the life and needs of the nation. Above all, community involvement has become imperative to exploit all available resources for bringing about a change in the attitudes and expectations of the community at large.

*Professor of English, S.K. University, Anantapur-515 003 (A.P.)

The concept of university is fast changing both in its structure and content of performance. It is now increasingly felt and realized that higher education has to come closer to the needs, aspirations and goals of the existential situation of society. Education now has to establish direct link between educator, national development and prosperity of the community. Those at the university has to function as a catalytic agent for bringing about socio-economic and cultural change in the country. We have to look upon our universities, not only as temples of learning but as social radars of the society. Our new universities, then, are in the community and of the community. They are all in all community-oriented, community-founded. Hence the significance of the role of university students in the development of the community.

Students' role in community welfare, according to L.K. Oad, can be discussed under three broad headings : (1) diffusion of knowledge among the masses; (2) involvement in the productive processes of the community; and (3) rendering socially useful service to the local community and the nation at large.

(1) *Diffusion of Knowledge*

The university students can disseminate knowledge which they have acquired in the university among the masses, so that the latter may lead a better life. The community provides facilities to them and, in return, the students should help the people in their economic and social uplift. This can be done in several ways by :

- a) running adult literacy classes;
- b) teaching the needy children in spare times;
- c) arranging popular talks on development in science, government policies, international relations, sanitation, hygiene and such other subjects of common interest with a view to enabling the masses to live as responsible citizens;
- d) giving demonstrations of better methods and techniques of cultivation, food preservation, kitchen-rearing, health, sanitation and other household jobs; and
- e) providing information about and giving demonstration of improved methods and techniques of earning livelihood.

Thus, the students can put their knowledge of the subject earned in universities to social use thereby enabling the community to perform their vocational activities in a more scientific manner.

(2) *Involvement in the Productive Processes*

The youth is so full of energy that if he does not get ample opportunities to build, to create and to produce,

he diverts his energies to destructive purposes. As Lewis Mumford rightly points out, "our young people are starving for lack of real tasks and vital opportunities. Many of them live like sleep-walkers, apparently in contact with their environment, but actually dead to everything, but the print of newspaper and the blare of radio"

Therefore, there is a need to awaken in students a desire to build this great nation. Such a constructive activity can help to make the distinction between intellectual and manual work less marked. It could contribute to the increasing of national productivity, both by helping students to develop insights into productive processes and the use of science and by generating in them the habit of hard and responsible work. And it might help social and national integration by strengthening the links between the individual and the community and by creating bonds of understanding between the educated persons and masses. Patriotism cannot be developed by inspiring talks alone but actually involving oneself in nation-building activities.

Students can be involved in the productive processes of the nation in the following ways :

- a) Assisting the community in the construction of places of community service such as a school building, a centre of recreation, a dispensary or a link road.
- b) Assisting farmers to fight against pests.
- c) Getting protected water supply to the rural masses.
- d) Making the local industries develop welfare centres for the workers.
- e) Constructing centres of recreation for the village community.
- f) Preparation of play-fields for the parental institution.
- g) Assisting the community to improve sanitary conditions.
- h) Plantation of trees and their care.
- i) Assisting neighbouring schools in preparing school equipment, furniture, and teaching apparatus.

(3) *Rendering Welfare Service to Community*

Besides participation in the productive processes, the students need to involve themselves in rendering useful services to the community in the institution and the community outside. Through involvement in the services of the community, a student gains psychological

satisfaction. It is psychologically very much satisfying to have performed a noble act. Doing service to the community helps one to identify one's interests with those of the community served. Activities pertaining to community service can be as follows :

- a) Helping oneself in doing some of the jobs, which area attended to at present by lower staff members such as cleaning one's own room in the hostel, self-serving in the canteen and decorating the college campus.
- b) Helping the community in fighting against drought, famine and epidemics.
- c) Running community services in a co-operative manner such as running a co-operative consumer society, issuing books from the students' library and running a co-operative mess.
- d) Helping Government in maintaining peace and order during emergency.
- e) Helping the community in maintaining order during fairs and holding exhibitions.
- f) Preparing the people to defend the country against internal and external threats.
- g) Helping Government in fighting against social evils such as drinking, gambling, black-marketing, bribery, dowry and corruption.
- h) Helping in community development programmes.

When we accede to the proposition that the university and the community are empirically inseparable, though we may do so for analytical purposes, we tend to search for a mechanism which may give opportunities for frequent interactions between these two structures. Now that State Councils for Higher Education are being formed at the state level, they should create organic linkages for the universities with the policy making bodies of the state as well as with the executive side of the developmental programmes of the government. It is suggested that for this purpose the following steps be taken :

- i) The state machinery should be able to refer to the universities such of its problems in the execution of its programmes that require alternate solutions and improvements.
- ii) The State Council of Higher Education or in its absence the Governor of the State as Chancellor should act as a nodal point to receive such problems and form them out of the specific university department for seeking innovative solutions.

iii) This nodal agency should also be able to act as a conduit between universities and the government for application of such new concepts developed by the universities as has relevance in the developmental set up of the State. These should be given a trial by the state machinery in a larger area either by itself or through the respective university by providing it proper facilities.

iv) Each university should try to find solution to the macro problems of the State in the micro system developed by it through its Extension programmes in the service area around the university. Thus the knowledge gained and developed at the university will have a bearing on the real situations and help add lustre and life to higher education.

These steps are essential to make the university serve not only in teaching a few students of the community but also involve itself with the problems of the community as a whole. The universities cannot be expected to solve the problems of the people but they can strive to seek solution to the same and to offer replicable models to the state. Our universities need to acquire a new efficacy to function as active agents of community development instead of being passive, elitist organisations insensitive to vital national necessities.

Thus, instead of being only major instruments of socio-economic upper mobility of the students who can afford to reach its portals and thus inadvertently help in depriving the rural hinterland of its talents which ultimately enter the urban employment market after university education, the universities must bring the academic talents of their faculties and the idealism of their youthful students to bear on the problems of the common people of the land and not allow themselves to be considered elitist organisations, deaf to the groaning of the deprived and the suffering.

Universities should, therefore, visualise and conceptualize things with a long range perspective, a capacity which neither the political nor the commercial organizations can be expected to possess. As the speed of life increases with science and technology leaping forward, providing more and more physical power and comforts and greater and greater production of destruction techniques, the need to keep to the direction of survival requires a longer range view. As the greater speed of the car requires the headlamps to throw its light to a greater span of distance, so too the lamps of knowledge that universities are, have to illumine the future path of humanity to a longer distance. Then and only then would the universities be called beacons of enlightenment.

Educational Reform : A Perspective

Noorul Hasan*

Education in our country is the focal point of the larger national malaise and enervation. The evils that afflict it are misapplication of democracy, frequent breakdown of the normal procedures of civilised life, acute frustration, and a desperate plea for undefined change, which are responsible for deeper crises. Education, nevertheless, offers a front for a sustained fight against these destructive forces.

The fact that education has failed in its crucial function as an agent of regeneration calls for some heart-searching and re-orientation among educationists. A meaningful education needs a community of ideas and beliefs that all who come to learn will share and a process of living based on common concerns and good-humoured tolerance. To plead for something so trite as this may seem hopelessly naive. Unless we can first cater to some very primary human needs all our highly sophisticated educational techniques will result in mere cerebration and thus prove self-defeating, one may consider this obscurantist or rather simple-minded, as all of us are conditioned by the sophistry and seductive phrasology of the modern educational technology. The emphasis on these are rather obvious as all our reformatory measures have helped education only to become progressively worse if anything. It is not important, then, to return to the primal human base of the academic community, to think of a medium for the co-existence of minds within a certain dialectic of tradition and change, of individual liberty and a voluntary allegiance to institutional authority. It is not sometimes realised by the advocates of democratisation that individual freedom to the extent that there are no norms or distinctions left to govern individual character or judgment is the denial of the very fabric of any civilisation or society – academic or otherwise. We need to turn from the chronic discussiveness of present-day educational thinking to the formulation of the principles on which an academic society must rest. To take an entirely undeterministic or existential view and say that all *a priori* formulations are false is also to say that the whole idea of formal education is meaningless and that life and learning will never admit

of a form but must by definition remain entirely contingent. Our argument, however, stems from an implicit trust in the validity and desirability of formal education. Formalism may be constricting but, it is in this case, an essential part of the bargain. It is fashionable nowadays to say that real education takes place not in the classroom but outside the educational institutions. But those who think that the classroom is an unnecessary and anachronistic construct ought also to have the courage to abolish the universities or at least abolish themselves from the universities in the ardent service of the education that awaits them in the liberating stench of the gutter. To be on the one hand engaged in formal education and to plead, on the other, for the abolition of the classroom is an indication at least of muddle-headedness if not dangerous hypocrisy.

There has to be a supreme core of ideas and assumptions spontaneous adherence to which must be considered an essential part of the total educational experience. Absence of such a matrix of norms in a university will make it liable to exploitation by alien and anarchic forces. Much of the current political interference with academic institutions is due to their own lack of self-definition and integrity as institutions. The universities should strive to preserve their own character, goals and identity.

The university has to be the conscience of the entire society to which it belongs. It has to re-discover, interpret, and refine the complex cultural heritage of that society. The present disenchantment with education is due largely to the fact that it has failed to take care of the whole man. It has addressed itself to the mind and stuffed it, like a taxidermist, with dry and bloodless chaffs of information, but it has failed to educate and energise the instincts. The result is the dismal "emotional illiteracy" manifesting itself in the purposeless violence and cheap exhibitionism of what is called student-power. The ready susceptibility of our students to outlandish cults and to dying western fashions is a measure again of the roaring darkness in their souls. The education they have received does not induce in them any sense of engagement with their personality or culture. It debilitates even their native, untutored sense of self and society. The average educated young Indian

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graduate either escapes ostrich-like to the congenial west or goes back to the village, obeys the patriarchal command, uses his degree to get a fat dowry, marries it, and settles down to vegetate comfortably in a white-collar career – either choice proclaiming eloquently the utter failure of his education to enable him to live an independent, resourceful, and creative life without thoughtless acquiescence or hysterical non-conformity. Education should impinge on the total moral consciousness of the student and in this context the role of education in imbibing right kind of attitude and instilling values cannot be undersecured. It has also to impart to him a subtler understanding of the cultural determinants of his personality. In fine, it is to give him adequate powers of self-understanding and spiritual survival. Education then needs a fundamental, cultural or humanist bias to be able to take care of the total development of one's personality in relation to the immediate cultural context available to him for self-expression.

The university must offer a discipline of living and learning in an atmosphere of affectionate interdependence and untroubled faith in the irreplaceableness of the rather comic, much-maligned human voice of the teacher by any impersonal system or electronic gadget. One can abolish the classroom as one can also abolish the family. There is no scientific reason for the existence of either. They both answer only a profound, irrational need of the solitary human self.

In planning its courses and activities the university must be guided by the leisure principle, if not the pleasure principle. Leisure is the one chief distinction of academic life. And it has its share to contribute to the total education of the human personality. The university must offer one a period in which to look round upon the world and upon oneself without the ragging sense of an enemy at one's back, or the insistent pressure to make up one's mind, a moment in which to taste the mystery without the necessity at once of seeking a solution. It must offer a respite from the break-neck hurry of this clock-conscious human race. There has to be a sanction for genuine personal relationship between students and teachers without asking them to slang one another as a proof of their intimacy. Discipline of course is a word with offensive overtones. It conjures up the hateful vision of the village school master with his waxened cane, but it will be granted, I hope, that undisciplined exuberance can only lead to chaos and to the

meaninglessness and boredom of a freedom without formal restraint. Like Wordsworthian nature the ideal academic life elevates and refines while it chastens and subdues. Academic ethics should allow one the right to critical dissent and dignified difference of opinion provided such an allowance does not lead to habitual irreverence and flippancy as forms of disagreement. Attitudinizing argues a complete lack of attitudes.

It is necessary, in our struggle against the present impasse in education, to shift the emphasis from formless freedom, informality, and experimentalism to a counterbalancing traditionalism, a sense of discipline, and a sanction for relevant humanism.

Let me quote from a recollection of his university by Bertrand Russell, the arch-dissenter and father figure of of scientific rationalism and orthodoxy in this century :

"The dons whom my contemporaries and I profoundly respected had a great influence upon us, even sometimes when we had nothing to do with them in the way of work. There was, for example, Verrall, whose speciality was Euripides. He was brilliantly witty in a rather astringent style. He became a victim of arthritis, which gradually deprived him of the use first of his legs and then of other muscles. In spite of intense pain, he continued to display exactly the same kind of rather glittering wit, and, as long as the power of speech remained with him, he did not allow physical disability to affect his mind or his outlook. His wife was a believer in spiritualism and used to bring him masses of nonsensical script obtained by automatic writing. His practice in making sense out of Greek manuscripts enabled him to emend these scripts until they seemed to have sense. But I am afraid his attitude was not as reverential as the spirits could have wished."

Cambridge emerges, in this quotation, as an academic society bound together by intense and intelligent personal relationships, a place where your humanity at all events is deeply involved and exercised. It is this sensitive memory of a pure human relationship that remains with the sceptical philosopher to the end of his days. The urbanity and poignantly human tone of the casual though feelingful recollection are, I think, a tribute to the enviable richness of life in Cambridge. That it makes such a memory so peculiarly insistent is a clue to its superiority and excellence as a university. And is that not our clue too?

Strategies to Raise Standards in Higher Education

K.M. Pathusa*

The deterioration of the standard of higher education is often talked about and written on by both educationists and politicians. The former blame it on an outmoded educational system with all its inherent ills of recalcitrance to change, mentalism, mediocrity, incompetence and others of a purely academic nature. The latter attribute this to non-productivity, commercialisation and others of a social or economic character. In recent years fall in standards of education has been the serious concern of some of the top administrators of the State of Tamil Nadu. They attribute the progressive fall in the number of candidates entering the administrative services of our country from the South to such deterioration. While the lament of both educationists and non-educationists is justifiable on the basis of the grounds of their criticism of higher education, issues may not be clear unless we understand them in their proper context.

The system of education that was prevalent during the forties and fifties of this century in our country was predominantly colonial in character and catered to the needs of a set up, which was of course characteristically feudal in structure. There was of course an ebullience of national aspiration to march into the promised land of free India but the vagaries of a democratic system did not supersede those of an earlier era. The highest aspiration of an educated youth in those days was to look up to competitive opportunities and to see himself or herself seated in the saddle of power and authority.

Nobler aspirations of service and constructive contribution to create a new society largely depended on the vision of great men such as Gandhiji, although the bureaucracy should be credited with the efficiency that made such a vision come true, if not fully, at least partially. More independent minded men sought freer openings in the legal or other professions where one could be oneself without being part of a feudal system. True, power came to be vested in the people eventually but the aspirations of young men were oriented towards power and position. The educational system that prepared graduates for offices continued to be efficient in promoting competitive success in the hunt for careers. The value of education was that of preparing for careers in offices, banks and schools. The curricula were traditional and provided for the study of arts and sciences, not always for higher purposes of research or social transformation but for careers. Thus it came about that the degree was looked upon as a passport for career-entry. Institutions of higher learning which saw

beyond this immediate goal and worked with religious and moral values were few.

The educational system geared to such a purpose needed only "information cargo" and memory to store it as well as the mental ability to reproduce it. The larger the quantity of the cargo, and the quicker one recalled it from memory, the better were the chances of competition success. Values of development and transformation did not have a place of importance in such a system. Successive education commission reports, among other things, emphasised the need for vocationalisation and job-orientation. This value has brought changes in the educational system in this direction. Curricula of colleges and universities went in for more and more professional and quasi-professional courses. Consequently, commerce, business management, physics, computer sciences, and such other subjects are now in great popular demand. Application has taken the place of pure knowledge and physical skills that of mental skills. Rush for professional courses such as medicine, pharmaceuticals, engineering, teaching and law remains unabated. It is in this way that the value of providing career openings has come to stay. Added to this is the phenomenon of mass exodus to other countries in search of jobs or degrees for better jobs. The higher educational system has this need also on its agenda, as coaching for exams such as TOEFL and GRE is part of the curriculum in some colleges and universities. The second line of institutions in the unorganized sector such as tutorial colleges and other coaching centres reinforce formal institutions of higher learning in this material quest.

In the light of the foregoing assessment of what goes on in higher education we come back to the question of standards. If quality is understood as that which makes earners worthy of acquiring career openings then the present system of education has not deteriorated as it is said to have. The system has diversified career openings so that aspirants can choose less difficult and less competitive avenues. True, many from the South do not enter IAS cadres on account of increasing hurdles in the way such as hard work, expensive coaching, handicaps created by lack of spoken Hindi and other obstacles. One is told that a southerner has a great handicap on account of the language policy of some of the Southern states which do not encourage the learning of Hindi. Usually at interviews the interviewers casually switch code and speak in Hindi and this inhibits the candidate who does not know Hindi and he begins with a primary handicap and ends in flustering confusion. While this may be one of the contributory causes of many not making the IAS, the main cause is found elsewhere. Many take easier options of under-

* Director, Institute of Correspondence Courses and Continuing Education, Madurai Kamaraj University, Madurai -625 021

going training in business management or computer science which are less competitive and offer fewer impediments.

The initiative of other young men encourages them to be more independent and they choose setting up of independent business enterprises or enter some organizations to serve as employees. Educated young men have become tailors, launderers, manufacturers, export magnates and the like. An IAS itself is no longer looked upon with such avidity by young men as it was in the past; bureaucracy in a democracy loses part of its lustre when it is associated with policies of sorts. Corruption and nepotism are added disincentives which disenchant youth who are by nature idealistic.

If we accept this quality of higher education as legitimate as indeed we should, at least for sometime to come, until the pressure on the educational system to provide ways and means to get jobs is present – then, we can supplement the present provision by others :

(a) We may strengthen the vocational component of existing curricula by diversification, augmented training in real life situations, parallel curricula devoted to developing courses in collaboration with industries, continuing education in professional and quasi-professional courses and such other strategies.

(b) We may make coaching for IAS and other competitive examinations more systematic and less expensive. This may be introduced as a parallel educational activity actualised in evening sessions after 4 p.m. with the help of specially recruited staff. Professionalisation or job orientation by regular training, evaluation, mock-interviews, assessment, gradation of performance, etc. may be tried.

(c) The suggestions made above depend for success on the development of the communicative competence of the candidates. This is possible only when language teaching – in Hindi, Tamil and English – is made effective. While it is necessary to develop in the learner competence in writing, more important is the need to develop and flawess speaking ability.

Scholarship without speech is never manifest; writing without oral presentation is not quickly serviceable; and goodness without communication is not recognised.

The need to develop more effective strategies to impart skills in the spoken language is all the greater in the present context. These strategies may include :

- (i) practical training in spoken language, be it Hindi or English, which may be given by specially trained teachers whose spoken English or Hindi is flawless;
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- (v) conversation practice.

As standards and goals of higher education are diverse, appropriate strategies ought to be adopted to improve them. When there is a congruence of goals, a judicious integration of strategies is helpful.

Curriculum reform and teacher and institutional accountability are suggested as the means by which the concept of autonomy may become a constructive instrument for ensuring high quality of higher education.

If the general aim of higher education, for instance, is the promotion of *academic excellence* and the specific aim, in our own context, is *social relevance*, these cannot be achieved unless we changed the existing curricula.

Often teachers are wrongly blamed as irresponsible, recalcitrant and unionist in mentality and work. This is not completely true although one may say that this has become an inevitable phenomenon on the scene of higher education. Why is this so? It seems to me that they are driven to this extremity by the denial of the right of participation in endeavours which will give the teacher his share of decision making in matters like the making of the syllabi, the choice of students, the selection of methodology and in general the administration of the programme. Participation cannot be effective if individual freedom is pressed too far. An effective institution is one which is run by the collective participation of the student, the teacher and the management. All university reforms have emphasised such collective responsibility. This in practice, breaks down because of the denial of participatory processes by each to the other. Students, teachers and administrators are equal partners and where one abrogates the functions of the other or withholds what is due to the other or is indifferent to the other, the institution of education will collapse for all practical purposes. Institutions will present a facade of functioning but functioning itself will be non-existent. This is unfortunately true of many of our institutions.

It is here that we need to emphasise institutional reform and accountability. As educationists we are all accountable to society which pays us to educate. An institution which is sensitive to this fact will do well to define its goals, choose appropriate strategies, fully participate in processes of education and deliver the goods by these means.

Until such functioning is ensured talks about raising of standards cannot be translated into action; much less can educational institutions serve the cause of intellectual development and social transformation.

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Until such functioning is ensured talks about raising of standards cannot be translated into action; much less can educational institutions serve the cause of intellectual development and social transformation.

UGC Funding – Some Suggestions

A.S. Ratnam*

The University Grants Commission offers financial assistance to colleges with a view to improving the infrastructural facilities of the colleges and to raise the academic standards. The financial assistance reaches the colleges in various forms and for different purposes like – in the form of funds for building classrooms and laboratories or in the form of scholarships (fellowships) awarded to the teachers for pursuing research. The colleges throughout the length and breadth of the country have benefited by the liberal funding of the University Grants Commission. It is a sad fact that in spite of the large amounts of money doled out to the colleges, the standards haven't gone up as expected. On the contrary, every now and then there is an uproar in the country about the growing indiscipline and falling standards. The society in which the educational institutions function has to some extent bear the brunt of this depressing situation. But ways and means have to be found by the UGC to remedy the situation. Here are some suggestions.

(1) The norms for providing assistance to the colleges have to be amended. Colleges of long standing which have been the beneficiaries for more than ten years should be disallowed from seeking any financial assistance from the UGC. Any college which has been in existence for more than fifteen years will have become self-sufficient with classrooms, laboratories and sports facilities. If the college after fifteen years existence also depends on external assistance, it means that there is something amiss in the functioning of the college – By stopping the flow of grants to old colleges, the UGC will have funds at its disposal to offer to new and upcoming colleges.

(2) The UGC in consultation with the universities should encourage new colleges only to introduce restructured courses and new subjects at the first degree and at the Postgraduate level. This will enable the colleges to specialize in traditional courses or modern disciplines. This step will go a long way in raising the standards and link education with employability.

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(3) The UGC should forthwith set up regional centres for proper surveillance. The regional centres should be entrusted not only with the duty to disburse grants but also to scrutinise the accounts and to supervise the working of the colleges at regular intervals. There is a growing suspicion in the minds of administrators and academicians that the funds are not properly utilised and the academic and financial matters are not properly managed.

(4) The UGC can exert pressure on the central and state governments to encourage starting of affiliating universities where no teaching work is carried out. This will make the universities administrative centres and examining bodies. The autonomous colleges which are making long strides on the academic highway are aimed to this end, after all.

(5) It is a pity that though jobs are offered to graduates and postgraduates on the basis of performance at the All India Competitive examination, there is no uniformity in syllabus prescribed by the universities. The fact that regional language is the medium of instruction in a university doesn't deter the university from following the All-India syllabus. By having different syllabi, we are inadvertently bringing an academic disparity in the country.

(6) The UGC at present takes the college as a unit for granting funds for building classrooms and laboratories, for buying library books and to open sports complexes. Instead of taking a college as a unitary recipient of financial assistance from the UGC, a cluster of colleges be identified as a unit for the purpose of developing sports facilities and library. To start with, this can be implemented in towns and cities where two or more colleges exist. Such a procedure will save expenditure on the part of the UGC.

(7) The UGC while releasing grants should advise the universities to set aside a part of the grants (say 2 – 5 percent for the development of the information services in affiliated colleges. Thus the UGC will not only reduce its financial burden to a large extent, but also ensure effective utilisation of the funds.

Effective Utilisation of Periodicals Budget

Some Simple and Possible Methods

S.R. Ganpule*
T.S. Kumbar**

Introduction

Periodicals are the carriers of current information. The results of research conducted by an individual and organisation in various fields in different parts of the world are reported through this media. Therefore, periodicals are considered as a vital source of information in the library periodical collection. Libraries, particularly, the ones attached to the institutions of higher learning, research organisations, and industries allocate more than 70% of their total budget for subscribing to the journals published in their respective fields.

But the ever increasing cost of these periodicals coupled with inflation, decreasing value of Indian rupee against foreign currencies, increasing postal rates on one hand and stagnant library budgets on the other have forced librarians to resort to discontinuation of periodicals. Libraries are making every effort to see that they retain useful and relevant journals. Various evaluative studies are conducted to support their decision. But the situation continues to worsen year by year. Certain measures which are within the purview of library management are discussed; some of these may have already been explored and while others could be experimented with. We are convinced that if systematic efforts are made by the professional colleagues in their respective libraries in trying each one of these measures, it would definitely ease some of the pressure on periodicals budget.

Purchase Methods & Corresponding Measures

The methods that hold promise are : 1. Institutional membership, 2. Package plan/Group Subscription, 3. Combined Subscription, 4. Multi-year subscription, 5. Library discounted titles, 6. Proper checking of prices, 7. Avoid paying service charges, 8. Gratis/controlled free subscription, 9. Exchange of publications, 10. Mail/shipping charges, 11. Subscribing to Periodicals in Microform, 12. Renewing Periodicals on time, 13. Renewing through agents, and 14. Avoid duplication.

Institutional Membership

Several learned associations, institutions and organisations offer institutional membership to the

libraries. All periodicals published by these organisations are supplied against the membership fee. In some cases substantial discount is offered. They do offer discounts on other publications too, such as, books, conference proceedings, etc. This will not only cut the cost but also libraries can get more titles with less amount. To name a few organizations for example, American Computing Machinery Inc., American Ceramic Society, American Powder Metallurgy Institute offer the Institutional Membership to libraries.

Package Plan/Group Subscription

Careful scanning of journals and publisher catalogues reveals that quite a good number of specialised professional bodies offer Package Plans of Group Subscriptions either to promote certain titles or to increase interaction among the professionals. Libraries do stand to gain some amount of benefit here, because publications brought out by these bodies are specialised and need based. If the library is subscribing to majority of the publications barring a few, it is advisable to go in for the Package Plan Subscription. In some cases the libraries gain somewhere between 25% - 40%. Professional bodies like Royal Society of Chemistry, American Chemical Society, IEEE, IEE, American Institute of Chemical Engineers offer these type of subscriptions.

Combined Subscription

Many publishers offer combined prices for more than one title. Normally such journals belong to one or very similar subject. Publisher tries to push the new and less circulated titles. Still there are certain titles which it is beneficial for libraries to purchase as there is substantial saving at combined prices. Single titles cost more. Careful scanning of price structure of each title can yield some amount of saving or acquisition of more material with same money.

Multi-Year Subscription

Subscribing to certain periodicals of continued interest for more than one year can bring savings from 5% - 25% depending upon the nature of offers made by different publishers. Here, care has to be taken to see that periodical publication is regular and publishers are well established. This decision may affect annual budgeting but one has to take a long term view. Looking at the fluctuations in conversion rates in most cases libraries stand to benefit a lot.

*Librarian, **Asstt. Librarian, Central Library, Indian Institute of Technology, Powai, Bombay- 400 076.

Library Discounted Titles

Some publishers offer discounts to libraries. They are mainly professional bodies, trusts, social organisations, govt. funded or international organisations. If these titles are ordered directly from the respective organisations, libraries do get the benefit of this discount. This may not be very substantial saving but it does add to the total saving.

Proper Checking of Prices

These days publishers come up with varieties of price structures, e.g. World Scientific Publisher offers separate price for developing countries. Gordon Breach publisher has a separate structure for corporate and university subscriptions. Likewise several publishers make difference between profit and non-profit making organizations, academic libraries, industrial libraries, professional organisations and social organisations, etc. Librarians need to put in some effort to scan all the journals received and review from time to time the prices offered by the publishers and avail of the benefit. This effort could also yield good savings.

Avoid Paying Service Charges

Several Indian libraries route their orders for foreign titles through some foreign agents presuming that it saves their time and effort in getting issues on a regular basis. But these agents charge a minimum of 5% service charges in foreign currency. This takes a good amount from the subscriptions budget. This can be avoided by going through the Indian agent. Now there are good number of subscription agents in India who offer comparatively good service without charging anything extra than the price charged by publishers, besides offering other benefits like getting issues by air freight, etc. Majority of the major publishers, these days appoint their own representatives in India to see that the distribution of journals is smooth.

Gratis/Controlled Free Subscription

Meticulous scanning of journals received in our own library, lists of journals received by other libraries, *Ulrich International Periodicals Directory*, *Indian Periodicals Directory* and several other sources will help in selecting the titles to be received on gratis. Several product oriented, professional associations' magazines and often the journal published by inter-govt., and international organizations are supplied gratis to select organizations. One will always find good number of relevant journals and newsletters. It is better to have them in our collection without extra spending.

Exchange of Publications

Invariably, every library whose parent organisation brings out a journal of a certain academic standing tries

to take benefit of this mode. This is possible in case of journals brought out by academic institutions, non-profit making bodies and professional organisations. Commercial publishers do not encourage this method. There are some libraries who exchange publications like annual reports, conference proceedings and other publications for journals. This, however, depends on the reputation of the parent institution and regularity in bringing out such publications. Few foreign libraries even enter in exchange of publications not published by them. In such cases they buy the publications and send across and expect the recipient library to enter the subscription, get the journal and send it across. This often works out to be a very beneficial venture.

Mail/Shipping Charges

Libraries do spend quite a bit of subscription amount on Air mail, Surface Airlifted & Air freight charges over and above the subscription cost. This is done to get the journals much faster. But when there is a cut in the budget, instead of stopping certain journals, it is advisable to avoid paying airmail charges and spend the same amount on subscription and get the titles by sea mail or else route the subscription through the agents who have the facilities of getting titles by Air freight which takes time anywhere between 4-8 weeks. By doing so we continue to get maximum titles with a lesser amount. Possibilities can be explored even in case of the titles which are compulsorily sent by Air mail. Some publishers prefer to send the issues by sea mail rather than losing a customer.

Subscribing to Periodicals in Microform

Many publishers have started bringing out the journals in both print & microforms i.e. Microfiche, Ultrafiche, 16 mm/35 mm film roles. If the library has an access to reading (Microform reader cum printer) facility, it is worth going in for the journals in microforms. There is nearly 30% saving in cost of subscriptions of each title besides getting them faster (Air mail) than the print form without extra charges. This, in fact, reduces the cost of binding, etc also. American Chemical Society, Royal Society of Chemistry, Institution of Electrical & Electronic Engineers, USA are some of the examples.

Renewing Periodicals on Time

Meticulously sticking to the schedule of renewing periodicals not only solves much of the problems of receipt of issues but also brings in a considerable saving. Several publishers put a deadline for the receipt of payment & if the payment is not made well within the stipulated period, they charge penalty anywhere between 1% - 5%. Another thing is that publishers offer discounts on titles renewed before the dead line fixed

by them. This can be availed of if renewal of those titles is properly planned. These days there is too much of fluctuation in the conversion rate. Most of the time it is going up only. Taking into consideration this factor, it is always better to pay well on time otherwise library may stand to lose several thousands to lakhs of rupees depending on the number of foreign titles.

Renewing Through Agents

Librarians need to apply a bit of their mind in taking a decision to what kind of titles are to be subscribed through agents. There is a competition among the agents. Some do offer Air freight facility, and do not charge handling charges. These can be taken advantage of.

There are some hidden benefits, like you can get number of titles by Air freight narrowing down receipt of issues within 4-6 weeks period, by savings on every foreign draft and other miscellaneous expenditure, etc.

Avoid the Duplication

Usually the teaching community is offered special assistance by parent organisation to becomes individual members of learned societies or paying individual subscriptions to journals which are at a very low cost. The

journals whose use is very limited could be encouraged to be procured on these basis. It may be noted that it is unethical to make use of journals obtained in such manner for library. It should never be done. Still the library can keep note of such journals being received so that a stray user can be directed to such a subscriber.

Conclusion

All the above mentioned methods are well within the purview of library management. He does not have to look for the support of his higher authorities to implement them. All that is required is a continuous scanning of publishers' catalogues, journals price lists, journals themselves, and establishing interaction among the fellow librarians, user groups, agents, publishers and professional bodies. Librarians, thus have a dual role. One as a manager and the other as a disseminator of information. He not only needs to scan contents of journals for dissemination of right information, but also be cost conscious. Adopting a systematic approach and resorting to cost effective methods for procurement of periodicals would go a long way in protecting the interest of users by avoiding the discontinuation of periodicals and effecting good savings in the budget.

BOOKS FOR RESEARCH SCHOLAR

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|--|---|
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All India Commerce Conference

A 3-day All India Commerce Conference was recently held at M.D. University, Rohtak. The topics discussed in 4 technical sessions included (i) Direct Taxes Reforms; (ii) Future of Cooperatives in India; (iii) Management of Service Sector in India; and (iv) Trade Unions and Productivity in India. Besides these technical sessions a seminar on 'Recent Economic Policy Initiatives' and two lectures in the memory of two distinguished past presidents (Dr. V.K.R.V. Rao and Dr. B.N. Das Gupta) of the Indian Commerce Association, were delivered by eminent Professors. Dr. Vinay Bharat Ram, Chairman, D.C.M. and Shri I.C. Singhal, Chairman, International Ceramics, spoke on 'Entrepreneurship' and 'New Economic Policy' respectively, at the valedictory function.

The technical session on Direct Taxes Reforms was presided over by Dr. Om Parkash, former Vice-Chancellor of Rajasthan University, and nearly two dozen scholars presented their papers. The speakers highlighted the issues and it was recommended that the minimum limit under Income Tax Act in case of individuals should be raised to Rs. 50000/-. Several speakers were of the view that upper limit on standard deductions should be deleted and this should be equal to the 1/3 of the salary. They also suggested that the charges in the rates of income tax should be: nil income tax on first Rs. 50,000/-, 20% on next one lac and 30% on the balance. It was also suggested that inflation adjustments should be done in income tax structure as is being done in several foreign countries. The Corporate tax should be lowered down and NRIs should be given more incen-

tives under income tax so as to attract more and more investment in Indian industry. Losses under the Head, 'House Property' should be allowed to be set off against income from other heads of income.

The session on 'Future of Cooperatives in India' was chaired by Prof. K.K. Saxena, Head & Dean, Faculty of Commerce, University of Lucknow. It was observed that the 'Cooperative Movement' which was based on principles of democratic management, voluntary association, self help, mutual help etc. had made great inroads in almost all walks of life in the country. In view of the fact that many of the cooperative institutions were either dormant or not functioning properly, it was recommended that Model Bill prepared by a Committee constituted by the Planning Commission which proposed for the simplification of co-operative Law should be adopted immediately, as the co-operative sector largely depended on the Government finance which gave rise to state control and political interference. It was also recommended that for the growth and development of this sector these should look for public finance, from the open market. The co-operative sector may be allowed to issue preferential shares, debentures with Govt. guarantee and raise public deposits.

The session on 'Management of Service Sector' was held under the Chairmanship of Prof. R.K. Lahri, University of Kalyani, West Bengal. It was observed that the service sector was the fast growing sector in the country which contributed to the extent of 40% of G.N.P. The Sector encompasses a variety of fields such as banking, travel, tourism, hospitals, hotels, airlines information,

technology, computer software, advertising media and couriers. It was emphasized by several speakers that these services required different types of professionalization as this would make these services cheaper as well as more standardized. The idea to orient these services through marketing hectic activities was mooted by several economists. Some of them also opined that the operation of these activities through pooled fund could further be improved and enlarged. However, this would require proper supervision, guidance and control by the clear cut rule and regulations of the Government. The service sector should be set up keeping in view the location atmosphere and the regional economic balance in the country.

The session on 'Trade Union and Productivity in India' was chaired by Professor P.C. Sharma, University of Allahabad. In view of the conflicting situation faced by the trade union between the labour and management on the one hand and production and labour welfare on the other, it was suggested that the present defects of the trade unions such as predominance and small size union, poor organizations of the unions, absence of whole time officers, elimination of unhealthy political influence, responsible trade union leadership could lead to a situation where labour productivity could not be improved. It was also brought out clearly that while trade union and managers were held responsible, it was the duty of the labour to be even more responsible for the certain drawbacks in the industrial ills in the country. It was recommended that trade union, no doubt, should fight for certain benefits to the advantage of the workers such as compensation of accident, medical aid, education, thrift and temperance, etc. Yet it should expect the labour to improve

efficiency leading to increased productivity.

Over 500 delegates drawn from different parts of the country attended the conference.

Science Park and Planetarium at Burdwan

The Chief Minister of West Bengal, Mr Jyoti Basu, recently inaugurated the Science Park and laid the foundation stone of Meghnad Saha Planetarium in the Burdwan University. Addressing the gathering Mr Basu opined that to instil science mindedness among the common people in particular for freeing themselves from the shackles of superstition and darkness was the need of the day and the universities should take the leadership in that direction. He called upon the scientists to use their knowledge to eradicate all sorts of superstitions from the society.

In his welcome address the Vice-Chancellor Professor Mohit Bhattacharya, explained the role of the Planetarium being set up under the aegis of the University of Burdwan and with the help of Japan under the Planetarium Equipment Package worth about Rs. 1.02 crores as cultural grant. The Astronomy and Space Science Education Centre was being set up with a view to popularising science and inculcating scientific aptitude amongst the people, Prof. Bhattacharaya said.

The then Deputy Chairman of the Planning Commission, Mr. Pranab Mukherjee, who graced the occasion, recalled the efforts of the eminent Indian scientists like C.V. Raman, J.C. Bose and Meghnad Saha even before Independence and felt that their efforts should be given more functional priority by the universities. Mr. Mukherjee urged upon Burdwan University to try to specialise in Space Science. He announced an ad-hoc grant of Rs. 50 lacs from the Planning Commission for the Meghnad Saha Planetarium.

Professor Shankar Sen, State Minister-in-Charge of Power, Science and Technology, felt that science should be taken to the remotest corners of our villages if at all we were to change the lots of the poor majority. Professor Satyasadhan Chakraborty, Minister-in-Charge of Higher Education, considered the science park, the science museum and the proposed Planetarium as pride of West Bengal. Dr. Saroj Ghosh, Director General of National Council of Science Museum, explained the purpose of the Science Museum and felt that both the Museum and the Science Park would come to immense social use of the students and the common people alike. Mr. Mehaboob Zahedi, Minister-in-Charge of Minority Affairs and Animal Resources, who presided felt that setting up of the Planetarium and the Science Museum and the Science Park at Burdwan itself were the culmination of the anti-illiteracy campaign in the whole of West Bengal in general and in the District of Burdwan in particular. The function was also attended by Smt. Anju Kar, Minister of State-in-Charge of Adult Education.

A Case for Nuclear Power

Prof P.N. Srivastava of the Nuclear Science Centre, Delhi, strongly advocated the power generation by using nuclear fusion while addressing the plenary session of the Indian Science Congress concluded recently in Goa.

To illustrate his argument, Prof Srivastava first talked about the benefits of radiation in medicine, insect control, irradiation of food and power generation. He then explained the nuclear programmes of the Western nations and claimed that they were still going in for nuclear power.

He said 420-nuclear power plants were in use globally, 120 were under construction and 100 were at the planning stage.

Criticising the scientists and writers who wrote against the use of nuclear power, Prof Srivastava said in a developing country a dependable and cheap source of power was necessary.

Prof Srivastava's talk also contained a slide show which attempted to prove in a very simplistic manner that radiation in small doses did not affect man to any great extent.

Prof Srivastava said after the Chernobyl disaster in Soviet Union, everyone thought the nuclear power was on the way out. But surprisingly more plants are being built.

He admitted that decommissioning the nuclear reactors was a problem. But he brushed aside the objections lightly by saying that the problems of thermal power plants were far greater.

Refresher Course in Sanskrit, Pali and Prakrit

The Department of Sanskrit, Pali and Prakrit, Kurukshetra University, recently conducted Refresher Course in Sanskrit, Pali and Prakrit. Forty four participants from different universities/colleges from the states of Haryana, Delhi, Madhya Pradesh, Orissa, Maharashtra, Assam, Rajasthan, Gujarat, Andhra Pradesh, Punjab, Jammu & Kashmir, Uttar Pradesh, Bihar and Tamil Nadu attended the 3-week course.

The Course aimed at providing intensive acquaintance with the up-to-date studies and curriculum in Sanskrit, Pali & Prakrit. The participants were addressed on relevance of Sanskrit in modern India, Sanskrit and Indian heritage, Sanskrit education and on different aspects of various branches of Sanskrit, Pali and Prakrit. They were acquainted with latest studies and researches in different fields in India and abroad.

The programme supplied fresh information on various topics/subjects, opened new vistas of research to the participants and provided orien-

tation to them for higher studies in Sanskrit, Pali and Prakrit.

Dr. Maan Singh, Professor and Chairman of the Department and Dean, Faculty of Indic Studies was the coordinator of the programme.

Fellowship for Research in Computer Vision

A young Indian scientist has been granted a fellowship of \$500,000 for research to build machines that can see and recognise objects they have seen before even if the material is different.

Twenty-nine-year-old Dr K. Nayar will receive \$100,000 in each of the next five years from the David and Lucile Packard Foundation, USA to pursue research in computer vision and develop physical models for vision, sensors for shape and reflectance and algorithms for visual learning.

Dr Nayar, who got degree in electrical engineering from Birla Institute of Technology, Mesra, Ranchi, is researching a new theoretical approach which would allow a computer to recognise a three dimensional object it has seen before even if its lighting, position, size or material is different from the original.

Oxford & Cambridge Scholarships

The Oxford and Cambridge Society of India invites applications for scholarships for study at the Universities of Oxford or Cambridge beginning from October 1993. Applicants must hold at least a first class Honours degree or its equivalent from a recognised Indian University. This should be their first opportunity to study abroad. They should have obtained admission to one of the colleges of Oxford or Cambridge, to pursue a course of study leading to the degrees of B.A. (with senior status at Oxford, or affiliated status at Cambridge), M.Sc./

M.Litt./M.Phil or D.Phil./Ph. D. The scholarship amount, worth Rs. 50,000/- each will be paid into the Scholar-elect's bank account in India once he or she has joined Oxford or Cambridge.

The candidates are also required to submit (1) Attested copies of degrees obtained, (2) Certificate of age, (3) Medical Certificate, (4) Two passport size photographs, (5) An essay in 400-600 words (preferably typed) indicating the candidates academic and extra curricular interests and achievements, and the reasons for pursuing a course of study at Oxford or Cambridge, (6) Copy of letter of admission to a college in Oxford or Cambridge.

The Scholarship would be awarded on the basis of a candidate's attainments, potential for excellence and relevance of the course of studies chosen to later life. Candidates shortlisted would be invited for interviews to be held in Delhi in May 1993.

Application forms may be obtained by sending a self-addressed Re. 1/- stamped envelope (9" x 4") to the Hony. President, Oxford and Cambridge Society of India, 35-A, Friends' Colony (East), New Delhi-110 065. The last date for receiving completed Application Forms is 5th April 1993.

International Student Symposium at Ranchi

The Birla Institute of Technology, Mesra, Ranchi, recently organised an International Student Symposium. The symposium was inaugurated by Dr. P.N. Chakravarty, Director, NIFFT, Ranchi, while the keynote address was delivered by the Director Dr. J. Jha. The student counsellor Dr. Bendapudy Kantarao, presented the state of the art in the Electrical, Electronic and Computer areas.

The symposium was attended by more than 30 participants who

presented papers in the areas of Instrumentation, Neural networks, switched capacitor implementations, hardware implementation of fast fourier transforms, and software algorithms. All the papers were related to the project work being implemented by the student groups. Two papers were received from US.

Anna Varsity National Award

The Indian Society for Technical Education has announced the Anna University National Award for Outstanding Academic '92 to Prof. R. Vasudevan of the Metallurgical Engineering Department of the IIT, Madras. The Award will be made during the XXIII Annual Convention of ISTE, to be held in December 1993.

Course on River Basin Management

The Centre for Remote Sensing of Civil Engg. Department, University of Roorkee, recently organised a short term course on "River Basin Management using Digital Remote Sensing Techniques". The course was inaugurated by Dr. P. Mukhopadhyay, Pro-Vice-Chancellor, and attended by seventeen participants from various research Organisations and Institutions.

The objective of the course was to impart advanced knowledge and training in the subject area with emphasis on application of latest remote sensing techniques in the field of water resources management.

We Congratulate.....

Dr. M.G. Muthukumarasamy who has been appointed Vice-Chancellor of the Annamalai University, Annamalainagar.

Sir Chhotu Ram Memorial Lecture

Agricultural Varsity at Imphal

ment on lines with the ideology of Sir Chhotu Ram.

Shri Dhanik Lal Mandal, Governor of Haryana and Chancellor of Chaudhary Charan Singh Haryana Agricultural University (CCSHAU) recently inaugurated the Sir Chhotu Ram Memorial Lecture at the university. Paying his humble tributes to the memory of Sir Chhotu Ram, the Governor said that low prices of agricultural produce was a major problem for the agriculturists today. He advocated the provision of incentive to the agriculture sector on the basis of industrial sector. He also released a book entitled Rural Development and Prosperity and a souvenir brought out on the work and ideology of Sir Chhotu Ram.

On this occasion, Dr. M. Wazid Khan, Prof. of Plant Pathology, Aligarh Muslim University, was awarded Sir Chhotu Ram National Award in recognition of the useful research work done by him in the field of rural development. In his work, Dr. Khan identified several nematodes resistant varieties of cereal crops and vegetables and suggested the new techniques for the elimination of powdery mildew, a common disease affecting the vegetables.

Dr. S.S. Johl, Prof of Eminence and member of Prime Minister's Economic Advisory Council, delivered Sir Chhotu Ram Memorial Lecture entitled New Economic Policy and Structural Adjustments in Agricultural Sector. In his lecture Dr. Johl said that under the existing agrarian sector where 79 percent of the farmers occupy less than 4 acres of land, it becomes imperative on the part of the agricultural scientists to devise the technologies which are beneficial for the small land holders. He said that unless and until internal weaknesses of the farm sectors were not removed, the benefits accruing of the new

economic policy would be of no use to the rural land holders. He suggested several reforms in the agrarian structure and desired that a School of Rural Development should be established in the name of Sir Chhotu Ram.

The Vice-Chancellor, Dr A.L. Chaudhry, highlighted the steps undertaken by the university to commemorate the memory of Sir Chhotu Ram. He resolved that the university scientists would continue to strive for the cause of rural develop-

The Central Government is reported to have issued a notification for the setting up of a farm varsity for the north-eastern region at an estimated cost of Rs. 64.30 crore.

The proposed university, to be located at Imphal in Manipur, would be set up on the pattern of State agricultural universities in the country with integration of teaching, research and extension education.

The university will have its campuses in Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Sikkim and



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2. LECTURERS in (a) Department of Personnel Management and Industrial Relations (1 Post reserved for SC) (b) Department of Family and Child Welfare (1 Post reserved for ST.) **Pay Scale:** Rs. 2200-75-2800-100-4000 (Min. Rs. 4576 Max. Rs. 7805 p.m.)

Qualification & Experience: (a) Master's degree (55%) in Personnel Management & Industrial Relations or Economics (b) Masters's degree (55%) in Social Work with specialisation in FCW or in a generic programme with field work or work experience preferably for 2 years in this field.

Outstation candidates called for interview will be paid TA as per rules. The candidates will be given admissible relaxation in tests/ interview performance and experience.

Prescribed application form along with detailed information giving qualifications/experience requirements/general instructions can be obtained from the Assistant Registrar (Personnel) either in person or by post by sending an application along with a self-addressed envelope and a copy of the caste certificate. The crucial date for determining age limit and length of experience is 19-3-1993. The last date for issue of application form is 1-3-1993. Completed application forms together with copies of certificates should reach the Assistant Registrar (Personnel) on or before 19-3-1993.

Dr. S.K. Bandyopadhyay
Registrar

Tripura.

It proposes to set up a college of agriculture in Manipur, college of veterinary sciences in Mizoram, college of fisheries sciences in Tripura, college of horticulture and forestry in Arunachal Pradesh, college of home sciences in Meghalaya, college of agricultural engineering and post harvest technology in Sikkim and college of postgraduate studies in Meghalaya.

Gold Medal for PAU Scientists

Three scientists, Dr Albel Singh

Kang, Dr Y. Singh and Prof. Jagmohan Singh, of Punjab Agricultural University, have been awarded 1992 Gold Medal by the Institution of Engineers (I) for developing instrumentation system for measuring vibrations during transportation of fruits and vegetables.

The data obtained by this instrument is of utmost importance in reducing intransit and transport losses in fruits and vegetables which are of the order of upto 40 percent. The award also carries a citation and cash.

"The Pursuit"

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23.2.93

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25.2.93

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"Understanding Shelley – III Ode to a Skylark"

26.2.93

"Tall father and short sons – II"

"A Discussion on Secularism"

"Loktak Lake in Peril"

27.2.93

"Old Masters"

"The Pursuit"

"Week Ahead"

News from UGC

Countrywide Classroom Programme

Between 22nd February to 27th February, 1993 the following schedule of telecast on higher education through INSAT-1D under the auspices of the University Grants Commission will be observed. The programme is presented in two sets of one hour duration each every day from 1.00 p.m. to 2.00 p.m. and 4.00 p.m. to 5.00 p.m. The programme is available on the TV Network throughout the country.

Ist Transmission

1.00 p.m. to 2.00 p.m.

22.2.93

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"New Techniques in Fish Culture"

"Vermicompost – II. The Two Roads"

23.2.93

"Equilibrium"

"Child : Growth and Development – III. Child Immunisation"

24.2.93

"Vampire Bat"

"Soil Mechanics in Practice"

"Questioning Rock Art"

25.2.93

"Electronics – IV. Equivalent Circuit of a Transistor"

"Magmatic Residues and Knowledge of Volcanoes"

"Modern Telugu Poetry – An Introduction"

26.2.93

"The Kagzi Trail"

"By the People – IV. Supporting a Candidate and Voting"

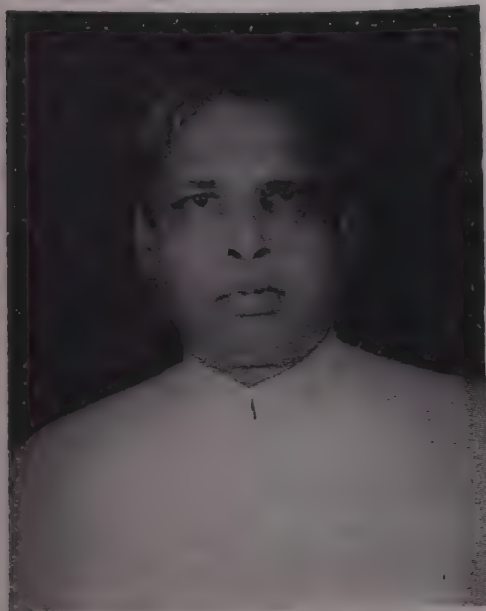
27.2.93

"Old Masters"

Prof. Powar is the new Secretary General

Prof. (Dr.) K. B. Powar has assumed the office of the Secretary General of the Association of Indian Universities on February 6, 1993.

Born at Jabalpur on 20 December, 1937, Prof. Krishnapratap Bhagwantrao Powar not only won the J. P. Trivedi Gold Medal for standing first in the B.Sc. Examination of Nagpur University in 1958, but also



Prof. (Dr.) K. B. Powar

bagged the King Edward Memorial Scholarship for Postgraduate studies and did his M.Sc. in Geology from Nagpur University in 1960. He earned his Ph.D. in Geology from Banaras Hindu University in 1967. Prof. Powar also won the Fulbright and Institute of International Education awards for higher studies and research in USA (1966-67).

A distinguished teacher, Prof. Powar lectured in Geology at the Banaras Hindu University (1960-69) and then served the Poona University first as a Reader (1969-77) and later as Professor and Head of the Department of Geology (1977-86). The department grew into an important research centre during this

period. He also established a School of Environmental Sciences at the Poona University. He was awarded 'Gaurav Padak' by Pune Municipal Corporation in 1984 in recognition of his outstanding contributions in the field of education. He was invited as a Visiting Professor at Sofia University, Bulgaria in 1983.

A geologist of repute, Prof. Powar has made significant research contributions to the petrology and structure of Kumaun and Ladakh Himalaya; the morphotectonics of the Deccan Volcanic Province and the petrogenesis of the Deccan basalts; the structure and metamorphism of the Precambrians of Madhya Pradesh, Rajasthan and Gujarat; and the groundwater and environmental geology of Western Maharashtra. He has been an elected fellow of the Geological Society of India (1966), Maharashtra Academy of Sciences (1984) and the National Academy of Sciences, India (1988). He was elected President of the Geology and Geography Section of Indian Science Congress Association (1986-87). He has been a member of the Board of Management of the Geological Survey of India (1984-87) and Chairman of the National Committee for International Union of Geological Sciences (1988-91). Presently, he is the Vice-President of the Maharashtra Academy of Sciences, and the President, and Chairman, Governing Body, Wadia Institute of Himalayan Geology, Dehradun.

A brilliant scholar, Prof. Powar has successfully guided the research work of 19 Ph.D. students, published 75 research papers, edited three research volumes and authored three textbooks in Geology.

An educational administrator of proven merit, Prof. Powar guided the destiny of the Shivaji University, Kolhapur as its Vice-Chancellor for two successive terms from 1986 to 1992. Here he introduced a number of reforms and laid particular emphasis on quality in all research work. The School of Environmental Sciences and the School of Energy Studies set up during his tenure speak volumes for his vision and qualities of leadership.

A widely travelled person, Prof. Powar has visited Canada (1966); UK (1967); Thailand and Singapore (1982); Italy, Federal Republic of Germany, Bulgaria, and Zambia (1983); USSR (1984); Australia (1988); and USA (1989).

Prof. Powar is no stranger to AIU. He was a member of its Standing Committee during 1986-88. He brings to his new office a wealth of scholarship and experience and a vision marked by scientific temper. We welcome Prof. Powar and wish him a highly fruitful and a satisfying tenure.

AIU Annual Meeting

The 67th Annual General Meeting of the Association of Indian Universities and the VCs Conference convened by UGC scheduled for December 1992 will now be held on February 21-23, 1993 at the Pondicherry University, Pondicherry.

Secretary General

East Zone Youth Festival

The Inter-University East Zone Youth Festival was held at the Gauhati University on 20-24 November, 1992 in which about four hundred youth artists from fifteen universities participated. Dr. N.K. Choudhary, Vice-Chancellor of the host university presided over the inaugural function. Speaking on the occasion Shri Sampson David, Senior Cultural Officer, AIU hoped that such Youth Festivals would inculcate the spirit of unity, integrity and brotherhood amongst the youth.

The competitive items commenced with the presentation of Skits in which nine universities participated. The Banaras Hindu University presented the theme of 'Machine' by depicting the malfunctioning of the education system which has been conferring degrees to thousands of students every year in the absence of any employment avenues. Nepotism, favouritism, corruption, red-tapism have come to rule the roost in the recruitment process.

In the Mime section Rabindra Bharati University depicted the item 'Rhythm against sound pollution'. It gave a solution to the chaotic sound pollution by restoring to musical rhythm. Manipur University projected the theme of the 'The Thief', portraying how a very rich lady untouched by worldly miseries confined within her own world steals the heart of a thief who barges into her room.

The Western Group Song began with the number 'Walk of Life' by

Bidhan Chandra Krishi Vishwavidyalaya. The Assam Agricultural University gave message for the world to come together in its presentation "We are the World". Finally, North Eastern Hill University presented the song "Knock Knock, knocking at heaven's door".

This was followed by Western Solo which included numbers of Bob Dylan, Whitney Houston, Pet Sagar, Don Hill, Lenon etc. by the universities' artists. Ringfart Tamsang sang the famous song of Lenon "Imagene". Solma Yamdo of Indian School of Mines, Dhanbad regaled the audience with his sonorous voice while, Gayatri Devi of Assam Agricultural University caught everybody's attention by her rendition of "One Moment in Time".

Nine universities participated in the Classical Dances. Kumari Sarita Singh of Ravishankar University presented Kathak followed by Rekha Talukdar of Gauhati University. D. Sudharani of Utkal University was adjudged the best dancer with splendid Odissi.

The One Act plays commenced with "Just Another Scene" by North Eastern Hill University which showed the pathetic predicament in which we find ourselves in the post colonial era. Banaras Hindu University presented 'Octopus' drawing the abject position in which the human race finds itself ever since its beginning. The play "IMAGITAMPAKTALOTLARO" (come and settle down in your Mother's Lap) staged by the Manipur

University was based on deforestation, leading to the destruction of the beauty of Nature. Indira Gandhi Krishi Vishwavidyalaya's presentation 'SAMBAA VANI YUGA YUGA' depicted the cruelty and oppression of the allegorical King "Andhakar Singh". It was a well-knit play which evoked tremendous response.

The Group Dance competition began with the "Jhumur", a typical dance of the labour community of Assam, performed by the Assam Agricultural University. The Manipur University team came up with dazzling attires to present the 'Lai-Haraoba' – a dance meant as a resolve to lead a better life in the new year. The performance of Ravishankar University was very well received. The Bihu folk dance of Gauhati University was associated with socio-cultural heritage of Assam.

In the Group Songs section the universities presented a folk and a patriotic song. The performance of Manipur and Banaras Hindu universities was very much appreciated.

The Light Vocal Solo (Indian) was a mix of male and female young stars in which geet, bhajan and ghazal were presented. Shankar Bhattacharya of Rabindra Bharati University won all praise for his captivating bhajan.

The Banaras Hindu University, Varanasi bagged the Overall Championship Trophy while the Runners' Up Trophy went to Gauhati University.

EAST ZONE INTER UNIVERSITY YOUTH FESTIVAL – 1992

RESULTS

A. MUSIC

- | | | |
|--|-----|-------------------------------|
| 1 (a) Classical Vocal Solo : | (1) | Rabindra Bharati University |
| | (2) | Banaras Hindu University |
| (b) Classical Instrumental Solo (Percussion) | (1) | Rabindra Bharati University |
| | (2) | Gauhati University |
| (c) Classical Instrumental Solo (Non-Percussion) | (1) | Rabindra Bharati University |
| | (2) | Gauhati University |
| (d) Light Vocal (Indian) | (1) | Ravindra Bharati University |
| | (2) | Banaras Hindu University |
| (e) Western Vocal Solo | (1) | Assam Agricultural University |
| | (2) | I.S.M., Dhanbad |
| (f) Group Song (India) | (1) | Manipur University |
| | (2) | Banaras Hindu University |
| (g) Group Song (Western) | (1) | Assam Agricultural University |
| | (2) | North Eastern Hill University |

Best Team in Music : Rabindra Bharati University

B. DANCE

- | | | |
|-------------------------|-----|----------------------------|
| (a) Folk/Tribal Dance : | (1) | Gauhati University |
| | (2) | Pt. Ravishankar University |
| (b) Classical Dance | (1) | Utkal University |
| | (2) | Pt. Ravishankar University |

Best Team in Dance : Pt. Ravishankar University

C. QUIZ

- | | |
|-----|--------------------------|
| (1) | Gauhati University |
| (2) | Banaras Hindu University |

Best Team : Gauhati University

D. THEATRE

- | | | |
|------------------|-----|-----------------------------|
| (a) One Act Play | (1) | Banaras Hindu University |
| | (2) | Manipur University |
| (b) Skits | (1) | Banaras Hindu University |
| | (2) | Utkal University |
| (c) Mime | (1) | Rabindra Bharati University |
| | (2) | Berhampur University |

Best Theatre Group : Banaras Hindu University

E. FINE ARTS

- | | | |
|--------------------------|-----|--------------------------|
| (a) On the Spot Painting | (1) | Utkal University |
| | (2) | Banaras Hindu University |
| (b) Collage | (1) | Gauhati University |
| | (2) | Calcutta University |
| (c) Poster Making | (1) | Calcutta University |
| | (2) | Gauhati University |
| (d) Clay Modelling | (1) | Gauhati University |
| | (2) | Utkal University |
| (e) Cartooning | (1) | Banaras Hindu University |
| | (2) | Gauhati University |
| (f) Rangoli | (1) | K.S.D.S., Darbhanga |
| | (2) | Banaras Hindu University |

Best Team in Fine Arts : Gauhati University

Overall Championship Trophy
Runners Up Trophy

—— Banaras Hindu University
—— Gauhati University

RESEARCH IN PROGRESS

A list of Research Scholars registered for Doctoral Degrees in Indian Universities

PHYSICAL SCIENCES

Mathematics

1. Mandal, Gopal Chandra. Fluid flows with or without dusty suspension and mass transfer and free convection. North Bengal.

Chemistry

1. Anup Kumar. Coordination Chemistry. Delhi. Dr S K Sindhvani, Department of Chemistry, University of Delhi, Delhi.
2. Awasthi, Aruna. Thermodynamic and ultrasonic studies of copper sulphate solutions in mixed solvents. HP. Dr R L Blokhre, Department of Chemistry, Himachal Pradesh University, Shimla.
3. Brij Bala. Synthesis and characterisation of 4-tert-butylphenoxides of tantalum(V) and exovanadium(V). HP. Dr K C Malhotra, Department of Chemistry, Himachal Pradesh University, Shimla.
4. Depinder. Transport studies of dioxane water and acetonitrile water solutions through grafted polymer membranes. HP. Dr R L Blokhre, Department of Chemistry, Himachal Pradesh University, Shimla.
5. Gupta, Aradhana. Phytochemical studies of myrica nagi, Benincasa hispida, and Lagemaria vulgaris. HP. Dr D C Sharma, Department of Chemistry, Himachal Pradesh University, Shimla.
6. Harit, Meena. Chemical examination of vegetable oils from some trichosanthes plants. Vikram. Dr P S Rathee, Prof, Department of Chemistry, Vikram University, Ujjain.
7. Kapoor, Vandana. Polymer chemistry. Prof S K Chatterjee, Department of Chemistry, University of Delhi, Delhi.
8. Lakhanpur, Sunita. Synthesis and characterization of speciality polymers from polypropylene film and rayon fibre by radiation induced graft copolymerization. HP. Dr B N Misra, Department of Chemistry, Himachal Pradesh University, Shimla.
9. Madhu Bala. Synthetic studies in heterocyclic compounds. Delhi. Dr V K Ahluwalia, Department of Chemistry, University of Delhi, Delhi.
10. Padhi, Bhabani Sankar. Quantum Chemistry. Delhi. Dr (Mrs) Rita Kakkar, Department of Chemistry, University of Delhi, Delhi.
11. Sahoo, Satyabrata. Corrosion inhibition. Delhi. Dr Gurmeet Singh, Department of Chemistry, University of Delhi, Delhi.
12. Pandey, Amita. Determination of some organosulphur compounds of industrial and agricultural importance. HP. Dr B C Verma, Department of Chemistry, Himachal Pradesh University, Shimla.
13. Pariana. Allelopathic properties of sunflower. Panjab. Dr R K Kohli, Department of Botany, Panjab University, Chandigarh and Dr P D Sharma, Department of Pharmaceutical Sciences, Panjab University, Chandigarh.
14. Sharma, Rajender. Synthesis and characterisation of some aryloxides of molybdenum(V) and tungsten(VI). HP. Dr (Mrs) Neerja Sharma, Department of Chemistry, Himachal Pradesh University, Shimla.
15. Sharma, Sanjeev. A study of the thermodynamic and transport properties of some nitrates in aqueous urea solutions.

HP. Dr M L Parmar, Department of Chemistry, Himachal Pradesh University, Shimla.

Earth Sciences

1. Khare, Manoj Kumar. Distribution and ecology of Recent shallow water foraminifera of Kakinada Bay, East Coast of India. H S Gour. Dr P K Kathal.
2. Nagar, Ram Gopal. Petrology and palaeomagnetism of a part of Mandu Plateau, Dhar District, M P. Vikram. Dr S F R Khadri, Lecturer, Department of Geology, Vikram University, Ujjain.

Engineering & Technology

1. Janahanlal, P S. Computer systems environment within OOP-AI Formalism. Kerala. Dr M Ramachandra Kaimal, Department of Computer Science, University of Kerala, Thiruvananthapuram.
2. Jasvinder Singh. Coding and modulation for interference suppression. Kerala. Dr Sakuntala S Pillai, Principal Scientific Officer, State Committee on Science, Technology and Environment, General Hospital Road, Thiruvananthapuram.
3. Khanna, Chander Mohan. Experimental and analytical studies on the behaviour of bends metering sediment-laden flows through pipelines. Panjab. Dr Baljeet S Kapoor, Asstt Prof, Department of Civil Engineering, Panjab Engineering College, Chandigarh.
4. Verma, Mehar Singh. Some investigation of mechanical behaviour of electroslag refined Cu and its alloys. Panjab. Dr S K Aggarwal, Prof and Head, Department of Mechanical Engineering, Panjab Engineering College, Chandigarh.

BIOLOGICAL SCIENCES

Anthropology

1. Mohanty, Manmath Kumar. Dermatoglyphics. Delhi. Dr H K Kumbhani, Department of Anthropology, University of Delhi, Delhi.
2. Oskuei, Parvin Golabi. Study of genetic markers and associated risk factors with coronary heart diseases. Delhi. Dr A K Kapoor, Department of Anthropology, University of Delhi, Delhi and Dr Gautam, K Kashatriya, Department of Anthropology, National Institute of Health and Family Welfare, Munirka, New Delhi.

Botany

1. Bose, Shrabanita. Experimental studies on silkworm food plants. Delhi. Prof N S Rangaswamy, Department of Botany, University of Delhi, Delhi and Dr Minakshi Sethi, Department of Botany, Miranda House, Delhi.
2. Chithra, V R. Cytological studies on hedyotidaceae and allied tribes. Kerala. Dr B Vijayavally, Prof, Department of Botany, University of Kerala, Kariavattom.
3. Daniel, Benny. Tissue culture studies in some medicinal plants. Kerala. Dr G M Nair, Reader, Department of Botany, University of Kerala, Kariavattom.
4. Hari Krishnan, G P. Biosystematic studies on the tribe cassiineae. Kerala. Dr N Omana Kumari, Reader, Department of Botany, University of Kerala, Kariavattom.

5. Usha, S.S. Cytological studies on vernonioides and allied tribes. Dr B Vijayavally, Prof, Department of Botany, University of Kerala, Kariavattom.

Zoology

1. Johnson, Cyril. Endocrine control of metabolism in fishes: Impact of altered environment. Kerala. Dr M C Subash Peter, Lecturer, Department of Zoology, F M N College, Kollam.

2. Mandal, Tapan Kumar. Analysis of the role of HLA alloantibodies during pregnancy. North Bengal.

Medicine

1. Gulati, Monica. Liposomal encapsulation of 6-mercaptopurine and azathioprine. Panjab. Dr Saranjit Singh, Lecturer, Department of Pharmaceutical Sciences, Panjab University, Chandigarh.

2. Narayanan Bhattathiri, V. Development of a multifactorial index of radiocurability in oral cancers. Kerala. Regional Dr M Krishnan Nair, Director, Cancer Centre, Thiruvananthapuram and Dr T Vijayakumar, Senior Scientific officer, Medical College, Thiruvananthapuram.

3. Vijan, Tarun. Release characteristics of diclofenac sodium from hydrophilic polymeric matrices. Panjab. Dr A K Singla, Reader, Department of Pharmaceutical Sciences, Panjab University, Chandigarh.

4. Walia, Ravneet. Pharmacognostic, Phytochemical and antihepatotoxic investigations on some Indian phyllanthus species. Panjab. Prof S S Handa, Department of Pharmaceutical Sciences, Panjab University, Chandigarh.

CURRENT DOCUMENTATION IN EDUCATION

A list of select articles culled from periodicals received in AIU Library during January 1993

EDUCATIONAL PHILOSOPHY

Bertilsson, Margareta. From university to comprehensive higher education: On the widening gap between 'Lehre and Leben'. *Hr Edn* 24(3), 1992, 333-49.

Hodgkin, Robin A. Michael Polanyi on the activity of knowing: The bearing of his ideas on the theory of multiple intelligences. *Oxford Rev of Edn* 18(3), 1992, 253-67.

Shils, Edward. Idea of the university: Obstacles and opportunities in contemporary societies. *Minerva* 30(2), 1992, 301-13.

Shippo, Kenneth W. Church-related colleges and academics. *New Directions for Hr Edn* 20(3), 1992, 29-42.

Webb, Graham. On pretexts for higher education development activities. *Hr Edn* 24(3), 1992, 351-61.

EDUCATIONAL SOCIOLOGY

McHenry, Kelley Emmons and others. Teaching resource-based learning and diversity. *New Directions for Hr Edn* 20(2), 1992, 55-62.

Shukla, Suresh Chandra. Ethnocentrism and education: An Asian perspective. *J of Ednl Plang and Admn* 5(3), 1991, 235-47.

Teichler, Ulrich. Equality of opportunity in education and career: Japan seen in an international perspective. *Oxford Rev of Edn* 18(3), 1992, 283-96.

EDUCATIONAL PLANNING

Neerada Reddy, P. Educational policy: evidence for new priorities. *Progressive Ednl Herald* 7(1), 1992, 73-5.

WOMEN'S STUDIES

Phiri, Seko. Women and literacy. *Adult Edn and Devp* 38, 1992, 217-24.

Shavlik, Donna L and Touchton, Judith G. The new agenda for women. *Ednl Record* 73(4), 1992, 47-55.

EDUCATIONAL ADMINISTRATION

Buchbinder, Howard and Newson, Janice. Service university and market forces. *Academe* 78(4), 1992, 13-5.

Moll, Richard W. Gentle war: The college admissions office versus the faculty: Confessions of a former Dean of admissions. *Change* 24(3), 1992, 42-7.

Rama Rao, M V and Sudarshanam, G. Welfare state and education in India. *J of Ednl Plang and Admn* 5(1), 1991, 17-25.

Reimers, Fernando. Adjustment and education in Latin America. *J of Ednl Plang and Admn* 5(3), 1991, 249-58.

Sizer, John and others. Role of performance indicators in higher education. *Hr Edn* 24(2), 1992, 133-55.

TEACHERS & TEACHING

Kashinath, H M. Advance organizer model: A key to meaningful verbal learning. *Progress of Edn* 67(5), 1992, 107-11, 116.

EDUCATIONAL RESEARCH

Barnett, Ronald. Linking teaching and research: A critical inquiry. *J of Hr Edn* 63(6), 1992, 619-36.

ECONOMICS OF EDUCATION

Eisemon, Thomas Owen. Private initiative in higher education in Kenya. *Hr Edn* 24(2), 1992, 157-75.

McMahon, Walter W and others. Vocational and technical education in development: Theoretical analysis of strategic effects on rates of return. *Eco of Edn Rev* 11(3), 1992, 181-94.

Nanavati, Arti. Earnings differentials among S & T manpower in India: A study on employed scientific and technical personnel/degree holders. *J of Ednl Plang and Admn* 5(4), 1991, 399-409.

Pascarella, Ernest T and others. College tuition costs and early career socio-economic achievement: Do you get what you pay for? *Hr Edn* 24(3), 1992, 275-90.

Pritchard, Rosalind M O. Principles and pragmatism in private higher education: Examples from Britain and Germany. *Hr Edn* 24(2), 1992, 247-73.

Sandy, Jonathan. Evaluating the public support for educational vouchers: A case study. *Eco of Edn Rev* 11(3), 1992, 249-56.

SCIENCE EDUCATION

Tamir, Pinchas and others. Practical skills testing in science. *Studies In Ednl Eva* 18(3), 1992, 263-75.

PHYSICAL EDUCATION & SPORTS

Meinberg, Eckhard. The significance of anthropology in theories of physical education and school sport. *Edn* 46, 1992, 55-75.

LIBRARIES & BOOKS

Olsen, Jan Kennedy. Electronic library and literacy. *New Directions for Hr Edn* 20(2), 1992, 91-102.

Porter, John R. Natural partners: Resource-based and integrative learning. *New Directions for Hr Edn* 20(2), 1992, 45-53.

Tierney, Judith. Information literacy and a college library: A continuing experiment. *New Directions for Hr Edn* 20(2), 1992, 63-71.

Wiggins, Marvin E. Information literacy at universities: Challenges and solutions. *New Directions for Hr Edn* 20(2), 1992, 73-81.

ADULT EDUCATION

Cervero, Ronald M. Adult and continuing education should strive for professionalization. *New Directions for Adult and Continuing Edn* 54, (Summer) 1992, 45-50.

Collins, Michael. Adult and continuing education should resist further professionalization. *New Directions for Adult and Continuing Edn* 54, (Summer) 1992, 37-43.

Cunningham, Phyllis M. Adult and continuing education does not need a code of ethics. *New Directions for Adult and Continuing Edn* 54, (Summer) 1992, 107-13.

James, Wayne Blue. Professional certification is not needed in adult and continuing education. *New Directions for Adult and Continuing Edn* 54, (Summer) 1992, 125-31.

LeGrand, Barbara F. Change of heart: Continuing professional education should be mandatory. *New Directions for Adult and Continuing Edn* 54, (Summer) 1992, 95-103.

White, Barbara A. Professional certification is a needed option for adult and continuing education. *New Directions for Adult and Continuing Edn* 54, (Summer) 1992, 133-8.

DISTANCE EDUCATION

Brindley, Jane E and Fage, Judith. Counselling in open learning: Two institutions face the future. *Open Learning* 7(3), 1992, 12-9.

Lewis, Roger. Approaches to staff development in open learning: The role of a competence framework. *Open Learning* 7(3), 1992, 20-33.

Satyanarayana, P. Teacher education at a distance: The emerging scenerio. *Progressive Ednl Herald* 7(1), 1992, 41-55.

COMPARATIVE EDUCATION & COUNTRY STUDIES

Shann, Mary H. Reform of higher education in Egypt. *Hr Edn* 24(2), 1992, 225-46.

COLLEGE OF BUSINESS STUDIES

(UNIVERSITY OF DELHI)

ADMISSION NOTICE

Applications are invited for admission to the 1st Year of the 3-Year Full-Time Professional Degree Course of Bachelor of Business Studies (University of Delhi) for the academic session, beginning July, 1993.

ELIGIBILITY CONDITIONS : (a) Candidate seeking admission to the B.B.S. Programme must be 17 years of age on October 1, 1993.

(b) He/She must have passed the Senior Secondary Examination of the Central Board of Secondary Education, or any other examination considered equivalent thereto by the University of Delhi, with an aggregate of at least 60% marks in his/her four subjects (English and three best subjects) (5% concession of marks is allowed to the SC/ST, and Children/Widows of armed personnel killed/disabled in action during the hostilities).

(c) Students who are appearing for the Senior Secondary examination in 1993 are also eligible to apply.

MODE OF SELECTION : Candidates who fulfil the above criteria will be called for an objective type written entrance examination to be held at Bombay, Calcutta, Chandigarh, Delhi and Madras.

HOW TO APPLY : Application forms together with information Bulletin can be obtained on all working days from January 15, 1993 from the College office on payment of Rs.20/- between 10 A.M. and 1.00 P.M. Outstation candidates may obtain application form by post by sending a crossed Bank Draft prepared only from STATE BANK OF INDIA payable at Delhi/New Delhi for Rs.20.00 drawn in favour of 'PRINCIPAL, COLLEGE OF BUSINESS STUDIES, DELHI' (Drafts from any other bank or postal orders will not be accepted). Candidates requesting forms by post must send a self addressed envelope (Size 18 cms x 25 cms) bearing postage stamps of Rs.4.00. Completed application forms must reach the College of Business Studies, Vivek Vihar, Delhi 110 095 latest by March 15, 1993.

Dr. S. S. GULSHAN

PRINCIPAL

AGRICULTURAL SCIENTISTS RECRUITMENT BOARD

I.C.A.R.

Krishi Anusandhan Bhavan, Pusa, New Delhi-110012

Advertisement No. 1/93

Applications are invited for the following Scientific/ Technical posts under the different Institutes and at the Headquarters of the Indian Council of Agricultural Research, New Delhi.

1. DEPUTY DIRECTOR GENERAL : (Crop Science) : I.C.A.R. Hqrs., New Delhi (One Post). **Pay Scale :** Rs. 7600/- Fixed. **Age :** Below 55 years. **Qualifications Essential :** (i) An eminent Scientist/Teacher having at least 20 years' experience of research/teaching/extension education out of which at least 8 years should be in the grade of Principal Scientist or an equivalent grade. (ii) Good academic record with a doctoral degree in any branch of Crop Sciences. (iii) Evidence of substantial contribution to research and scholarship as evidenced by variety product or technology developed or adopted as result of research; the quality of publication of papers in professional journals of repute; approved recommendations emanating from research or innovations in teaching/educational technology. (iv) Specialisation and experience in research in the field of Crop Sciences.

2. DEPUTY DIRECTOR GENERAL : (Engineering) : I.C.A.R. Hqrs., New Delhi (One Post). **Pay Scale :** Rs. 7600/- Fixed. **Age :** Below 55 years. **Qualifications Essential :** (i) As in Item No. 1 (i) above. (ii) Good academic record with a doctoral degree in Agricultural Engineering or related disciplines. (iii) As in Item No. 1 (iii) above. (iv) Specialisation in any branch of Agricultural Engineering.

3. ASSISTANT DIRECTOR GENERAL : (Home Science) : I.C.A.R. Hqrs., New Delhi (One Post). **Pay Scale :** Rs. 4500-7300/-. **Age :** Below 50 years. **Qualifications Essential :** (i) An eminent Scientist with published work of high quality and actively engaged in research/teaching/extension education. (ii) Good academic record with a doctoral degree in any branch of Home Science. (iii) 15 years' experience (excluding the period spent in obtaining the Ph.D degree subject to a maximum of 3 years) of research/ teaching/ extension education, out of which at least 5 years should be as a Principal Scientist or in an equivalent grade. (iv) As in Item No. 1 (iii) above. (v) Experience in coordination of Home Science education/ research/ or extension education.

4. ASSISTANT DIRECTOR GENERAL : (Food grain and Fodder Crops), I.C.A.R. Hqrs., New Delhi (One Post). **Pay Scale :** Rs. 4500-7300/-. **Age :** Below 50 years. **Qualifications Essential :** (i) As in Item No. 3 (i) above. (ii) Good academic record with a doctoral degree in any branch of Crop Sciences or related disciplines. (iii) As in Item No. 3 (iii) above. (iv) As in Item No. 1 (iii) above. (v) Specialised knowledge and working research experience in the field of fodder crops and food grains (preferably wheat, rice, maize, Sorghum and millets).

5. ASSISTANT DIRECTOR GENERAL : (Dairying & Animal Products Technology) I.C.A.R. Hqrs., New Delhi (One Post). **Pay Scale :** Rs. 4500-7300/-. **Age :** Below 50 years. **Qualifications Essential :** (i) As in Item No. 3 (i) above. (ii) Good academic record with a doctoral degree in Animal Sciences/ Animal Products Technology or related disciplines. (iii) As in Item No. 3 (iii) above. (iv) As in Item No. 1 (iii) above. (v) Specialisation and research experience in the field of Dairying/ Animal Products Technology.

6. ASSISTANT DIRECTOR GENERAL : (Animal Science Education), I.C.A.R. Hqrs., New Delhi (One Post). **Pay Scale :** Rs. 4500-7300/-. **Age :** Below 50 years. **Qualifications Essential :** (i) As in Item No. 3 (i) above. (ii) Good academic record with a doctoral degree in Dairy/Veterinary/ Animal Science/ Fisheries Sciences in any branch of Animal Sciences. (iii) As in Item No. 3 (iii) above. (iv) As in Item No. 1 (iii) above. (v) Experience in Co-ordination and management of Veterinary/ Animal Science educational Programmes.

7. PROJECT DIRECTOR : Directorate of Wheat Research, Karnal (One Post). **Pay Scale :** Rs. 4500-7300/-. **Age :** Below 50 years. **Qualifications Essential :** (i) As in Item No. 3 (i) above. (ii) Good academic record with doctorate in any branch of agricultural sciences. (iii) As in Item No. 3 (iii) above. (iv) As in Item No. 1 (iii) above. (v) Experience of work in the field of Wheat research/ improvement.

8. PROJECT DIRECTOR : Directorate of Pulses Research, Kanpur. (One Post). (Likely to be resigned as Director, Central Institute for Research on Pulses). **Pay Scale :** Rs. 4500-7300/-. **Age :** Below 50 years. **Qualifications Essential :** (i) As in Item No. 3 (i) above. (ii) Good academic record with a doctorate in any discipline of Crop Sciences or related sciences. (iii) As in Item No. 3 (iii) above. (iv) As in Item No. 1 (iii) above. (v) Specialisation in and experience of research work in the field of crop sciences preferably in pulses.

9. JOINT DIRECTOR : National Dairy Research Institute, Karnal (One Post). **Pay Scale :** Rs. 4500-7300/-. **Age :** Below 50 years. **Qualifications Essential :** (i) As in Item No. 3 (i) above. (ii) Good academic record with a doctoral degree in any discipline related to dairy or animal sciences. (iii) As in Item No. 3 (iii) above. (iv) As in Item No. 1 (iii) above. (v) Specialisation and experience of research in the field of Dairy Science.

10. DIRECTOR : National Bureau of Animal Genetic Resources/ National Institute of Animal Genetics, Karnal (One Post). **Pay Scale :** Rs. 4500-7300/-. **Age :** Below 50 years. **Qualifications Essential :** (i) As in Item No. 3 (i) above. (ii) Doctoral degree in Animal Sciences or related disciplines. (iii) As in Item No. 3 (iii) above. (iv) As in Item No. 1 (iii) above. (v) Experience and specialisation in the area of Cytogenetics, Blood groups, Molecular Genetics and Biotechnology, Propagation Genetics as applied to conservation of Genetic resources.

11. PROJECT DIRECTOR : Directorate of Oilseeds Research, Hyderabad. (One Post). **Pay Scale :** Rs. 4500-7300/-. **Age :** Below 50 years. **Qualifications Essential :** (i) As in Item No. 3 (i) above. (ii) Good academic record with a doctoral degree in any of the branches of Crop Sciences. (iii) As in Item No. 3 (iii) above. (iv) As in Item No. 1 (iii) above. (v) Relative research specialisation in Oilseeds.

12. DIRECTOR : Central Soil Salinity Research Institute, Karnal (One Post). **Pay Scale :** Rs. 4500-7300/-. **Age :** Below 50 years. **Qualifications Essential :** (i) As in Item No. 3 (i) above. (ii) Good academic record with a doctoral degree in Agricultural Sciences. (iii) As in Item No. 3 (iii) above. (iv) As in Item No. 1 (iii) above. (v) Specialisation and experience of research in the field of Salinity Management.

13. JOINT DIRECTOR : Central Rice Research Institute, Cuttack (One Post). **Pay Scale :** Rs. 4500-7300/-. **Age :** Below 50 years. **Qualifications Essential :** (i) As in Item No. 3 (i) above. (ii) Good academic record with a doctoral degree in any branch of Agricultural Sciences. (iii) 13 years' experience (excluding the period spent in obtaining the Ph.D degree subject to a maximum of 3 years) of research/ teaching/ extension education out of which at least 3 years should be as a Principal Scientist or in an equivalent grade. (iv) As in Item No. 1 (iii) above. (v) Specialisation and experience of research in the discipline of agricultural sciences with specific reference to rice crop.

14. PROJECT COORDINATOR (POTATO) : Central Potato Research Institute, Shimla (One Post). **Pay Scale :** Rs. 4500-7300/-. **Age :** Below 50 years. **Qualifications Essential :** (i) As in Item No. 3 (i) above. (ii) Good academic record with a doctoral degree or equivalent in any branch of agricultural or related sciences. (iii) As in Item No. 13 (iii) above. (iv) As in Item No. 1 (iii) above. (v) Specialisation and experience in potato improvement and/or potato production technology. Must be well conversant with the problems of production of potato under varied agroecological conditions in various parts of the country and be capable of planning, coordination and evaluation of research programmes in various aspects of potato research.

15. PROJECT COORDINATOR (PALMS) : Central Plantation Crops Research Institute, Kasargod (One Post). **Pay Scale :** Rs. 4500-7300/-. **Age :** Below 50 years. **Qualifications Essential :** (i) As in Item No. 3 (i) above. (ii) Good academic record with a doctoral degree in the relevant field of Horticulture/ Agricultural Sciences/ Plantation Crops etc. (iii) As in Item No. 13 (iii) above. (iv) As in Item No. 1 (iii) above. (v) Specialisation or experience in research on palms.

16. PROJECT COORDINATOR (AGRONOMY) : Project Directorate for Cropping Systems Research, Modipuram (One Post). Pay Scale : Rs. 4500-7300/-. Age : Below 50 years. **Qualifications Essential :** (i) As in Item No. 3 (i) above. (ii) Good academic record with a doctoral degree in Agronomy or in related discipline. (iii) As in Item No. 13 (iii) above. (iv) As in Item No. 1 (iii) above. (v) Specialisation and experience of research in Crop Husbandry.

17. PROJECT COORDINATOR (WEED CONTROL) : National Research Centre, for Weed Science, Jabalpur (One Post). Pay Scale : Rs. 4500-7300/-. Age : Below 50 years. **Qualifications Essential :** (i) As in Item No. 3 (i) above. (ii) Good academic record with a doctoral degree in any discipline basic to Weed Science. (iii) As in Item No. 13 (iii) above. (iv) As in Item No. 1 (iii) above. (v) Specialisation and experience in the field of Weed Science.

18. PROJECT COORDINATOR (PIGS) : Indian Veterinary Research Institute, Izatnagar (One Post). Pay Scale : Rs. 4500-7300/-. Age : Below 50 years. **Qualifications Essential :** (i) As in Item No. 3 (i) above. (ii) Good academic record with a doctoral degree in animal science or related discipline. (iii) As in Item No. 13 (iii) above. (iv) As in Item No. 1 (iii) above. (v) Specialisation and experience of research in Pig Breeding.

19. PROJECT COORDINATOR (BETELVINE) : Indian Institute of Horticultural Research, Bangalore (One Post). Pay Scale : Rs. 4500-7300/-. Age : Below 50 years. **Qualifications Essential :** (i) As in Item No. 3 (i) above. (ii) Doctoral degree in Horticulture/Plantation Crops/ Spices or related disciplines. (iii) As in Item No. 13 (iii) above. (iv) As in Item No. 1 (iii) above. (v) Specialisation and experience of research in betelvine or similar perennial crops.

20. PROJECT COORDINATOR (WATER MANAGEMENT) : WTC for Eastern Region, Bhubaneswar Under Project Directorate on Water Management, Rahuri (One Post). Pay Scale : Rs. 4500-7300/-. Age : Below 50 years. **Qualifications Essential :** (i) As in Item No. 3 (i) above. (ii) Good academic record with a doctoral degree in Agronomy (irrigation)/Soil Physics/ Soil & Water Engineering. (iii) As in Item No. 13 (iii) above. (iv) As in Item No. 1 (iii) above. (v) Specialisation/experience in farm water management research.

21. PROJECT COORDINATOR (PEARL MILLET) : I.C.A.R. Hqrs., New Delhi (for College of Agriculture Campus Pune and likely to be shifted to an alternate location in Rajasthan (One Post). Pay Scale : Rs. 4500-7300/-. Age : Below 50 years. **Qualifications Essential :** (i) As in Item No. 3 (i) above. (ii) Good academic record with a doctoral degree in any branch of Crop Sciences. (iii) As in Item No. 13 (iii) above. (iv) As in Item No. 1 (iii) above. (v) Specialisation and experience of research in the field of Pearl Millet.

22. PROJECT COORDINATOR (JUTE AND ALLIED FIBRES) : Central Research Institute for Jute and Allied Fibre, Barrackpore (One Post). Pay Scale : Rs. 4500-7300/-. Age : Below 50 years. **Qualifications Essential :** (i) As in Item No. 3 (i) above. (ii) Good academic record with doctorate in any branch of crop sciences. (iii) As in Item No. 13 (iii) above. (iv) As in Item No. 1 (iii) above. (v) Specialisation and experience of research in the field of Jute and Allied Fibres.

23. PROJECT COORDINATOR (FORAGE CROPS) : (Indian Grassland and Fodder Research Institute, Jhansi (One Post). Pay Scale : Rs. 4500-7300/-. Age : Below 50 years. **Qualifications Essential :** (i) As in Item No. 3 (i) above. (ii) As in Item No. 13 (i) above. (iii) As in Item No. 13 (iii) above. (iv) As in Item No. 1 (iii) above. (v) Administrative experience of Coordinating research preferably in the forage crops.

24. GARDEN SUPERINTENDENT (T-7) : Indian Institute of Horticultural Research, Bangalore (One Post). Pay Scale : Rs. 3000-4500/-. Age : Below 45 years. **Qualifications Essential :** (i) Bachelor's degree/Three years diploma in Agriculture/ Horticulture. (In fields where the duration of diploma courses available in the country is only two years, the maximum qualifications will be two years diploma instead of three years diploma. (ii) Seven years' experience in the management of a Horticultural Experiment Station.

IMPORTANT NOTES : (i) Explanation for the purpose of qualifications in respect of Scientific posts at S. No. 1 to 23 above, "An ARS Scientist/inducted/ recruited in a particular discipline shall be deemed to have acquired requisite qualifications in the relevant subject". (ii) In respect of posts appearing at S. No. 3, 15 and 17 the candidature of ICAR Scientists who were holding S-2 and S-3 positions as on 31.12.85 will also be considered on the basis of criteria of old qualifications as applicable to these posts prior to 1.1.86. (iii) The posts appearing at S. No. 1 to 23 will be filled up on tenurial basis for a period of five years.

CLOSING DATE FOR RECEIPT OF APPLICATIONS IN AGRICULTURAL SCIENTISTS RECRUITMENT BOARD OFFICE IS 16.3.1993.

(For candidates from abroad and in the Andaman and Nicobar Islands, Lakshadweep, Minicoy and Amindivi Islands, State/Union Territories in the North Eastern Region, Ladakh Division of J&K State, Sikkim, Pungi Sub-division of Chamba, Lahul & Spiti districts of Himachal Pradesh, last date will be 31.3.93.

GENERAL INSTRUCTIONS : • For application forms, please write to THE SECRETARY, AGRICULTURAL SCIENTISTS RECRUITMENT BOARD, KRISHI ANUSANDHAN BHAVAN, PUSA, NEW DELHI-110012. Request for forms must specify Advertisement No. 1/93, Name of the post and Item No. and should be accompanied by a self addressed unstamped envelope (23x 10 cms. size). • Separate application, with separate fee, is required for each post. • Application forms complete in all respects, should reach office of the ASRB together with the application fee of Rs. 8/- (No fee for SC/ST candidates) in the form of crossed Indian Postal Order drawn in favour of the Secretary, INDIAN COUNCIL OF AGRICULTURAL RESEARCH by the closing date. Applications received after the closing date will not be entertained. IN CASE A CANDIDATE ANTICIPATES DELAY IN FORWARDING OF HIS APPLICATION THROUGH PROPER CHANNEL, HE MUST SEND AN ADVANCE COPY OF THE APPLICATION ALONGWITH THE FEE, WHICH MUST REACH THIS OFFICE ON OR BEFORE THE CLOSING DATE. • Candidates abroad may apply in plain paper and send their applications together with an International Postal Order/Bank Draft covering the application fee drawn in favour of the SECRETARY, INDIAN COUNCIL OF AGRICULTURAL RESEARCH, so as to reach the office of the ASRB by the closing date. In countries where regular commercial channels are not available, the currency with the Indian Missions/ Posts abroad, who intum will issue posts. As such, General candidates NEED NOT APPLY against the reserved posts. • Crucial date for determining the age limit for candidates for each post will be the closing date for receipt of applications from candidates in India. There will be no maximum age limit for ICAR Employees. Relaxation in age is allowed to SC/ST persons to the extent permissible under the rules. • The prescribed Essential Qualifications are minimum and possessing of same does not entitle candidates to be called for interview. Where the number of applicants is large, the Board may restrict the number of candidates for interview to a reasonable limit on the basis of qualifications and experience higher than the minimum prescribed in the advertisement. • For all Technical posts and other Non-Scientific positions, a screening test may be conducted by the Board, to be followed by an interview. • T.A. contribution will be admissible to those called for interview as per ICAR Rules. • If required, candidates must appear for personal interview. • Higher initial pay may be recommended by the ASRB for specially qualified and experienced candidates for all the posts. • Canvassing, in any form, will disqualify a candidate.

davp 92/565

CLASSIFIED ADVERTISEMENTS

OSMANIA UNIVERSITY HYDERABAD - 500 007, (A.P.)

Advertisement No. 1/93

Dated : 21-1-93

Applications in the prescribed form together with the registration fee of Rs.10/- payable through IPO/Demand Draft only (M.O. is not acceptable) drawn in favour of the Registrar, Osmania University are invited for the following posts in the University service so as to reach the undersigned in person or by post on or before **22nd February, 1993** :

S.No.	Department	Prof.	Reader	Lect.	Remarks
GROUP - I					
A - ARTS					
1.	Ancient Indian History Culture & Archaeology	-	1	1	
2.	Arabic	-	-	1	
3.	English	1	2	2	
4.	French	-	1	1	
5.	Hindi	1	2	1	
6.	Journalism	1	1(SAP)	1	
7.	Kannada	-	2	1	
8.	Linguistics	1	2	2	
9.	Marathi	1	2	2	
10.	Persian	1	-	1	
11.	Philosophy	-	1	-	
12.	Sanskrit	-	1	-	
13.	Telugu	-	1	-	
14.	Tamil	-	1	1	
15.	Urdu	-	2	2(SAP)	
B - SOCIAL SCIENCES					
16.	Economics	1	3	2	
17.	Geography	-	2(1 SAP)	2	
18.	History	-	1	2	
19.	Public Administration	-	2	1	
20.	Psychology	-	1	1	
21.	Political Science	-	1	1	
22.	Sociology	-	2	1	
C - COMMERCE					
23.	Business Management	1	1 + 1*	1	*Reader/Placement Officer
	i) SPGC - Karimnagar	-	1	-	
	ii) PGC - Godavari Khani	-	-	2	
24.	Commerce	-	1	1	
	i) PGC - Mahaboobnagar	-	-	1	
D - LAW					
25.	Law	-	-	4	

S.No.	Department	Prof.	Reader	Lect.	Remarks
	E - EDUCATION				
26.	Education	1	1	-	
27.	Physical Education	-	-	5	
	GROUP - II				
	F - SCIENCE				
28.	Astronomy	2	2	2	
29.	Botany	-	2	1	
30.	Bio-Chemistry	1	1	1	
31.	Chemistry	-	2	-	
	i) PGC - Mirzapur	1	1	3	
	ii) PGC - Bhiknur	1	1	3	
	iii) PGC - Godavari Khani	-	-	1	Environmental Chemistry
32.	Geophysics	2	2	-	
33.	Geology	-	1	1	
34.	Mathematics	-	3	2	
	i) PGC - Nalgonda	1	1	2	
35.	Applied Nutrition & Home Science	-	-	1	
36.	Physics	-	1	2	
37.	Statistics	-	1	2	
38.	Zoology	-	3	2	
	i) PGC - Godavari Khani	-	-	1	Environmental Biology
	GROUP - III				
	G - ENGINEERING				
39.	Civil Engineering	1	2	2	
	i) PGC - Godavari Khani	-	-	1	Environmental Engineering
40.	Mechanical Engg.	1	-	2	
41.	Computer Science & Engineering	1	3	2	
	i) PGC - Godavari Khani	-	-	1	
42.	Electrical Engg.	-	1	1	
	i) PGC - Godavari Khani	1*	1	-	*NTPC Chair
43.	E.C.E. (Bio-medical)	1	-	1	
44.	Navigational Electronics (NERTU)	2	2	3	
45.	Mining Engineering (KSM)	1	2	2	
46.	Open Cast Mining (KSM)	1	-	-	Singareni Collarries Chair
	II - TECHNOLOGY				
47.	Technology	2	4	4	
	VIII PLAN				
	I - GROUP-I				
48.	Muscology	1	-	2	
49.	M.B.A	1	-	-	

S.No.	Department	Prof.	Reader	Lect.	Remarks
J - GROUP - II					
50.	Micro-Biology	1	-	-	
K - Group - III					
51.	Electrical Engineering	-	-	1	
52.	Computer Science & Engg.	-	1	1	
53.	Mechanical Engineering	-	-	1	
54.	Technology	-	2	-	
L - OTHERS					
55.	Reader - Acad. Staff College .. (One)				
56.	Lecturer/Programmer (CSE) .. (One) P.G.C. - Godavari Khani				
57.	Lecturer/Technical Officer .. (One) (Linguistics)				
58.	Deputy Librarian .. (One)				
59.	Programmer (CSE) .. (One)				

NOTE : The above posts includes the posts already advertised vide Advt. No. 2/92 dated 24.1.92. Candidates who have applied in response to the above advertisement need not apply again. However, they may submit additional information, if any.

PAY SCALES :	Professor	-	Rs. 4500-7300
	Reader	-	Rs. 3700-5700
	Lecturer	-	Rs. 2200-4000
	Dy. Librarian	-	Rs. 3700-5700
	Programmer	-	Rs. 1380-2750

Age : (As on last date of receipt of applications)

Professor	-	Not more than 50 years
Reader	-	Not more than 40 years
Lecturer	-	Not more than 35 years
Dy. Librarian	-	Not more than 40 years
Programmer	-	Not more than 34 years

NOTE : i) Age limit does not apply to the employees of this University.

ii) Relaxation in age to the extent of five years shall be granted to the candidates belonging to SCs, STs and BCs.

iii) Relaxation in age to the extent of five years shall be granted to the teachers who have put in atleast five years of service in any of the colleges affiliated to the Osmania University.

RESERVATIONS :

15%, 7 1/2% and 25% reservations as per Roster System are made for the candidates belonging to Scheduled Caste, Scheduled Tribe and Backward Classes respectively for the post of Readers and Lecturers only. The following table shows reservations applicable including backlog vacancies already notified in Advertisement No. 2/92.

Group	Category	Total Posts	OC	SC	ST	BC			
						A	B	C	D
Group-I	Readers	37	3	20	13	1	-	-	-
	Lecturers	43	7	13	18	1	3	-	1
Group- II	Readers	21	1	8	11	-	1	-	-
	Lecturers	24	3	6	13	-	-	-	2
Group-III	Readers	18	5	6	4	-	1	-	2
	Lecturers	23	8	6	6	-	1	-	2

Application forms together with the details of qualifications and other conditions can be had from the Director, Department of University Press and Publications, Osmania University, Hyderabad - 500 007, on payment of Rs. 10/- in person or by sending an IPO/Demand Draft together with the postal charges made payable to the Director and by sending a self-addressed envelope 14.5 x 26.5 cms.

REGISTRAR

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Advertisement No. G-75/92-93**

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QUALIFICATIONS AND EXPERIENCE :

(1) Master's Degree in Library Science/Information Science/Documentation with atleast 55% marks or equivalent; (ii) One year specialisation in information technology/Archives and Manuscript keeping OR Master's degree in an area of thrust in the Institution; (iii) 8 years' experience as an Assistant University Librarian/Librarian of a reputed Institute; and (iv) Evidence of innovative library services, published work and professional commitment.

Desirable : M.Phil/Ph.D. degree in Library Science/Information Science/Documentation Archives and manuscript keeping.

Application form and full details can be obtained from Registrar on request accompanied by a self-addressed envelope of size 25 cm x 10 cm. Completed applications should reach the Registrar by 27-2-1993.

REGISTRAR

**INDIAN INSTITUTE OF
TECHNOLOGY, BOMBAY
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Advertisement No. G 77/92-93**

Invites applications for the post of Deputy Registrar (Finance & Accounts) from the Scheduled Caste candidates. Pay

Scale : Rs. 3700-5700. Total emoluments on Minimum of the scale (including H.R.A) : Rs 7505/- per month. **Qualifications :** A post-graduate degree with atleast 55% marks or its equivalent grade with 10 years relevant experience. Prescribed application form alongwith detailed information sheet giving qualifications/experience/requirements/ge-

neral instructions can be had from the Registrar by sending stamped envelope of 25 cm x 10 cm. Completed application forms together with copies of certificates should reach the Registrar on or before 26th February, 1993.

Registrar

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Applications are invited on plain paper in the proforma given below from Indian nationals for the award of 20 Scholarships (ten for Masters and ten for Ph.D. degree) on a merit basis under above mentioned Scheme for higher studies/research leading to a Master/doctoral degree. These scholarships are not admissible for post-doctoral studies.

Value : Scholarships cover :

(a) full tuition fees; (b) economy class air fares (both ways) to Australia and back (c) adequate living allowance to cover housing and food for the duration of the Scholarships (this is also payable during semester and annual breaks).

II. AGE : Candidates for Masters' degree and for Ph.D. must have attained the age of 21 and 25 years respectively by 1.1.93 and but not have exceeded 40 years of age by 1.1.93.

III. LAST DATE : March 12, 1993.

IV. MINIMUM QUALIFICATION : (a) For Master Degree : One must have completed Bachelors' degree in one of the subject-fields indicated below with first Division and at least 60% marks in the opted subject. Candidates should give one page academic justification for going to Australia for Masters' Degree. (b) For Ph.D. : One must have completed Masters' degree in one of the subject-fields indicated below with first division (applicant will be required to write a description : minimum 500 words of his/her proposed study abroad) specifying title, hypothesis of research, methodology, institutions in India and Australia where such studies are done (4 copies of Research proposal to be enclosed). (c) The candidate must have completed tertiary education in English Medium. (d) Those who already obtained Masters/Ph.D. Degree, need not apply again for the same degree course.

IV. SUBJECT-FIELDS

(a) **ENGINEERING, TECHNOLOGY & SCIENCE :** Aeronautical Engineering, Biotechnology, Instrument Technology, Communication Engg., Electronic Engg., Manufacturing Engineering, Mineral Processing Engineering, Industrial Design, Information Technology, Mining Engineering, Community Health, Computer Science and Agricultural Science.

(b) **HUMANITIES & SOCIAL SCIENCES :** International Business, Management Studies, Urban and Regional Planning, History, Economics, English Literature, Environmental Studies, Sociology, Education and Pedagogy including Educational Administration, Special Education etc., Philosophy, Fine Arts, Art Conservation, Architecture, Political Science, Psychology, Mass Communication, Demography Population studies.

N.B. I. : Only candidates with 60% of marks and above at the above prescribed qualification are eligible and where grades are mentioned, the candidate must indicate the conversion formula adopted by the University/Institution and should also indicate equivalent percentage of marks.

2. Equivalent foreign degree will be considered. 3. Each application must be accompanied by attested copies of (a) Certificate of age (b) Mark-Sheet of the qualifying Examination (c) All degree/diplomas Certificates. 4. Candidates who have already been abroad for Study/training specialisation either on Scholarship or on their own for a period exceeding Six months are eligible to apply only if they have been in India for at least two consecutive years after their return from abroad. 5. Applications in the subject field other than those specified above will not be considered. 6. Applications of candidates who are abroad will not be considered. 7. Candidates must furnish a clear and precise programme of study/research (minimum 500 words specifying title of study/Hypothesis/Objective of study/Research, Methodology (To be adopted) Institutions where such studies are being done. 8. Those who have already obtained Masters/Ph.D. in India or abroad, need not apply for the same degree. 9. Candidates who do not possess the requisite qualifications, need not apply. 10. Candidate applying for Master Degree should enclose one/two pages of note justifying their proposed study in Australia. 11. Documents submitted alongwith the applications will not be returned. Hence candidates are advised to send only the Photo copies of the certificates etc. duly attested. 12. Since these Scholarships are offered by Foreign Governments, applications should invariably be submitted in English only. 13. Employed candidates must send their applications through their employers with a 'No Objection Certificate'. They will not be

called for interview unless the certificate is forwarded with the application. Application through proper channel should reach the Under Secretary, ESI Section, Ministry of Human Resource Development, Deptt. of Education, A-1/W-3, Curzon Road Barracks, Kasturba Gandhi Marg, New Delhi-110001 by March 12, 1993.

N.B. : Fifty Percent (50%) slots of scholarships are earmarked for female candidates.

PROFORMA FOR APPLICATION

- | | |
|---|---|
| <ol style="list-style-type: none"> 1. Name of the Scholarship Scheme : 2. (a) Subject : (b) Course opted 3. Name of the candidate :
(in Block letters) with 4. Date of birth and the State to which the Candidate belongs 5. Whether Member of SC/ST (A Certificate from the competent authority should be attached). 6. Academic record starting from High School/Higher Secondary (Attested/Photostat copies of certificates to be attached). | <p style="text-align: center;">Recent Passport Size photograph duly signed to be pasted here. Without photograph application will be considered incomplete.</p> |
|---|---|

Name of the University/ Board Instt.	Examination(s)	Year of passing	Division/ class with position, if any (In case no class is awarded and only grading is done the conversion formula may be mentioned)	Percentage of marks obtained and position if any.	Subjects taken.
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7. Details of professional practical training and research experience specifying the period and number of papers published/previous employment with name and date of employment if any.
8. Nature of the present employment with name and date of appointment/designation and the name and address of the employer.
9. Have you been abroad? If so give full particulars of the country visited and the period of stay. Also mention the date, month and year of return to India (purpose of visit also to be indicated).
10. Proposed programme of study/research and training specifying the following.
 - (i) The work at present engaged in :
 - (ii) Nature and Programme of Study research/training desired; (500 words - 4 copies).
 - (a) Title of study/Research.
 - (b) Hypothesis/Objective of study.
 - (c) Methodology (to be adopted).
 - (d) Institutions where such studies are being done.
 - (e) Relevance of study in Indian/academic contact.

Place :

Date :

Signature of candidate

NOTE : Employed persons must send their applications duly sponsored by the Employers. However advance applications will be considered provisionally pending sponsorship by employers provided attested copies of certificates of age and qualifications are attached to advance copy of the applications.

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IN THIS ISSUE

Values of Academic Life	1
Human Resource for Development	6
Nuclear Science Centre	8
Institutional Planning	10
Campus News	
English as the Link Language	13
Population Education in Higher Education	14
Inter-disciplinary Research	14
Vacant Students Programme	16
News from UGC	
Countrywide Classroom Programme	16
News from Abroad	
Training Programme in Educational Planning and Administration	17
Master's and Ph.D. Programmes in Human Ecology	17
Book Review	18
Research in Progress	19
Theses of the Month	21
Classified Advertisements	24

Opinions expressed in the articles
are those of the contributors and do
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Values of Academic Life

A. N. Tripathi*

Like all other creations of rational and purposeful human endeavour, the institution of university has been evolved for the realisation of certain values. These values are not mere articulations of some nebulous, idealistic notions. They are the expressions of the fundamental ethos of academic life and constitute the guiding principles for the pursuit of academics. The health of the academic life, as well as the quality of academic work, ought to be judged by the extent to which these values are realised in academic activities. For their effective realisation they need constant examination and active nourishment. Such a value examination is particularly significant at the present time, which has been called a time of value-confusion or value-crisis in our society. The present discussion on the values of academic life is grouped into its five interrelated though distinct value dimensions.

Values in Pursuit of Knowledge

The primary aim of university is to cultivate and to promote learning. This pursuit of knowledge is an intellectual quest in the realm of pure ideas, and of natural and social phenomena. It is through this pursuit that man has been able to develop systems of abstract ideas, alter the conditions of life to create a civilised order of society, and to add meaning and value to existence. To a true scholar however the joy of learning is the highest reward and an end in itself. Sharing this joy with other scholars and students, and through this sharing creating love for learning in them, is a basic value of academic life.

Pursuit of knowledge is possible because of the unique faculties of thought, reason and intellectual curiosity inherent in man. The true indicator of the quality of scholarship is not the amount of knowledge acquired or produced but the maturity of thought and reason reflected in it. It is this maturity which leads to wisdom. Its development requires rigorous intellectual training. Arousal, refinement and nourishment of intellectual faculties is therefore another fundamental value in the pursuit of knowledge.

Other essential values in this pursuit are intellectual freedom, honesty, responsibility and intellectual humility. Progress of ideas is not possible without the freedom of intellect to explore the unexplored. Although freedom of thought is a prized possession of man, the will and capacity to use it require conscious cultivation. Encouragement of this cultivation is an important value of academic life. The difficulties of this process are beautifully expressed in the following verse of Jane Taylor :

*"Though man a thinking being is defined,
Few use the grand prerogative of mind;
How few think justly of the thinking few!
How many never think, who think they do".*

Threats to intellectual freedom arise from several quarters. This freedom is jeopardised when thought is constrained to confine itself within the parameters defined by the accepted system of ideas prevalent in a society. Shielded from the much needed nourishment from new ideas, the social structures and institutions based on older ideas become fossilised. The customary modes of behaviour become mere dead habits. The concern for this tyranny of tradition is voiced in the following lines of Rabindranath

Tagore :

*"Where the mind is without fear,
And the head is held high,
Where the streams of human reason,
Are not lost in the Dreary desert sand of dead habit,
In that light my country, Awake."*

Intellectual freedom is viewed as the greatest threat by authoritarian regimes, populist ideologists, religious fundamentalists, doctrinaires, dogmatists, and the like. The free play of thought creates urges and pressures for change. This is resented by status quoists, whose vested interests are threatened by change. Similar hostility to intellectual freedom is often exhibited by pseudo-intellectuals, or academic 'dwarfs,' who manage to occupy positions of authority in the academic world.

Questioning mind and constructive discontent are the two essential manifestations of the free exercise of intellect. They constitute the starting point of any enquiry and are the basic elements of creative thinking. Advancement of knowledge and its useful applications have been possible only because of this creativity of man. Its spring board is the distinctive curiosity and sense of wonder. In addition it requires an imaginative mind and logical thinking. Providing a supportive environment which encourages creativity is an important value in the pursuit of knowledge.

Freedom and responsibility are always the two sides of the same coin. Intellectual freedom implies the binding responsibility to use this freedom for academic advancement and for the benefit of the society and not merely for one's own personal advancement. The academic pursuits should not be divorced from the realities of life; they should be alive and responsive to the problems and processes of social change. The society looks up to the learned academics for proper examination, explanation and solution of diverse problems arising out of the process of development. Their honest, impartial and expert opinion is an essential safeguard for the long term interests of the society. Large amounts of precious national resources are invested to support research projects in universities. Scientists and other scholars need to show greater sense of responsibility for proper utilisation of these funds and a greater measure of accountability for the outcome of these projects.

Pursuit of knowledge requires exercise of great care to avoid errors, fallacies and wrong judgements arising either out of ignorance or lack of objectivity. This is particularly so when evaluating and projecting one's own work. Intellectual honesty demands not only true reporting of observations and findings but also acceptance of mistakes in one's own work when so demonstrated. It also means giving due credit to the works of other scholars, colleagues and students. A similar concern for objectivity and honesty is expected

when dealing with larger social issues, whether it is the Ram Janambhoomi-Babari Masjid issue or the Dunkel Report.

All great seekers of knowledge have been impressed by the infinite vastness of knowledge and its limited comprehension by the individual mind. Newton expressed this intellectual humility as "I seem to have been only a boy playing on the seashore, and diverting myself in now and then finding a smoother pebble or a prettier shell than ordinary, whilst the great ocean of truth lay all undiscovered before me". In the Indian tradition the value of intellectual humility is expressed in famous saying like *विद्या ददाति विजयं* or the injunction against arrogance of knowledge, like *विद्यायां ज प्रसादितव्यं* ।

Habitual practice of these values internalises them. The classical learned, intellectual personality develops through this process of internalisation of values of academic pursuit. It is these personalities who give inspiration to students and younger scholars, and because of whom the academic profession has been admired and respected in all the ages and in all the civilised societies. It is sad to see the diminution in the number as well as in the importance of such learned scholars in our universities today.

Values in Education

Providing high quality education to the youth of society is the other major aim of university. It is this youth which constitutes the basic human resource for the development of the country. The future leaders in all the diverse spheres of national life will be drawn from amongst them. Providing adequate knowledge and intellectual training to this human resource is the main objective of university education. It is not so much their numbers but the quality of their education which contributes to national development. The parameters of this quality are the values which are emphasised in the process of education.

The main objective of the teaching-learning process is to create love for learning in the learner, encourage and nourish his curiosity and to guide him in the hopeful exploration of the world of knowledge. It is the intellectual training and development of right attitudes which are important rather than information transmission. Therefore the highest value should attach to the educational injunction "Teach your pupil to think" : to which we may add "and to enjoy the process of thinking". Professor Jacob Neusner says on "*how to grade your professor*", "Much that you learn today would not be true five years from now; many things you have not heard of today will be important five or ten years ahead. If I teach you something supposedly 'relevant', I am guaranteeing irrelevance. If I teach you how to work, to have good attitudes, to take responsibility for your own ideas, to communicate, and to think a problem through, no mat-

ter what I use in order to get those basic skills of mind and intellect across, then I am giving you something you can use for a very long time. Those skills will never change".

Unfortunately it is the examination, and not the teaching-learning process which has acquired the highest value in our educational system. The teacher prepares the student to pass the examination and the student then goes on to use all possible means to do so. The question papers test only his capacity to memorise and to reproduce bits of undigested information. Higher levels of academic competence – comprehension, analysis, synthesis, evaluation and judgment – are seldom tested. Most university teachers do not have knowledge or training in modern educational testing procedures. Same is the case with new ideas about teaching-learning methodologies. A patently wrong notion that training in these essential educational skills is necessary only for school teachers and not for university teachers has gained ground. In appointments and promotions it is only the research contributions which are given credit to and not the competence in educational skills. No encouragement or facilities are provided to those who want to improve their educational skills. And even the Academic Staff Colleges are giving only limited attention to this matter.

The quality of education is very much dependent on the attitude of teachers towards the ideals of their noble profession. The profession is collectively responsible for honouring the trust reposed in it by the society that it will provide high quality education to its youth. The teaching profession exists not merely to provide gainful employment to teachers but to promote the ideals of good education. "Education in the hands of those who have no faith in their calling but have jostled their way into it for economic gains, will be a curse". Most of the other learned professions have evolved their codes of professional ethics to ensure adherence to professional ideals. A similar movement is urgently needed in the academic profession also.

The goal of good education can be achieved only by the joint efforts of students and teachers. Students have to learn how to receive good education. They have to realise and fulfil their obligations towards the educational process and its ideals. Collectively they may be called the 'values of studentship'. These need to be properly articulated and effectively communicated to the students by words and by deeds. Instead of such efforts one only hears laments about students' lack of seriousness. Bringing about desired attitudinal changes amongst them is also the duty of teachers. The perception of education as a joint enterprise of students and teachers, and the important value of mutual trust and respect between them is beautifully expressed in the following prayer of Kathopanishad :

सह जावतु । सह नौ भुजतु । सह वीर्यं कुरुष्वहे ।
तेजस्विनावधीतमस्तु सा विहिषस्वहे ॥

Values Related to Integrated Personality Growth

Along with development of mental and scholastic abilities, integral personality growth is an equal concern of university education. The concept of integral personality is a holistic view of all the different dimensions of human personality. Its main elements are the character of the individual and his social, cultural, moral and aesthetic personality. Their development requires creating awareness, sensitivity and commitment to ideals and human values. When these ideals are internalised and habitually practised they give right directions to desires, emotions, actions and behaviour of the individual, i.e., they are reflected in his total personality. It is persons with this kind of integrated personality, rather than deficit driven, self-serving individuals endlessly hankering after money and power, who can lead a happy and purposeful life, who can face the future with vision and courage, and who can lead the nation in its tremendous task of social, economic and cultural transformation.

The main reason for the value-crisis in contemporary Indian society is the total neglect of value dimensions and character formation aspects of education. We have many more engineers, doctors, economists, historians, scientists, with greater knowledge and expertise. But there is more tension and strife. We cannot say we are moving towards creation of a good society. The educated class of professionals, administrators, politicians, businessmen are exploiting their knowledge and skills for promoting their personal gains. Their education has not imbibed in them the sense of responsibility to work for the common good. The danger of education without values is succinctly expressed in the saying :

साक्षरी विपरीतस्वे साक्षरी भवति ध्रुवम् ।

Many leaders of Indian renaissance like Annie Besant, Rabindra Nath Tagore and Madan Mohan Malaviya established colleges and universities with special emphasis on character formation and integrated personality growth. In their vision education was the means for development of the spirit of nationalism, service to society and universal humanism. One of the aims of Banaras Hindu University, started in 1916, is "to promote building up of character in youth by religion and ethics as integral part of education".

Malaviyaji emphasised that the basic teaching of Indian traditions is that the highest values of human endeavour is *तौ कल्याण* and *तौ संगृह* । He embedded a number of formal and informal structures in the academic life of the university for promoting these values. Unfortunately they have withered away in the absence of inspiring guidance and growth of a false notion that such activities are not in consonance with the modern secular concepts of state. No alternative programme, in tune with the modern times, has been thought of for promoting much needed personal values

like integrity, honesty, fair play, tolerance, cooperation, and a sense of service to society.

Courses dealing with value related topics should be developed and taught as part of the academic programme at the university level. This is particularly necessary for creating awareness of social and ethical dimensions of specialised professions like engineering, law, medicine, management, etc. A significant body of literature has developed on these topics. Many significant practical problems in these areas require deeper theoretical understanding. Some American universities have established centres for research and teaching in this area. One such unit is the "Centre for Study of Ethics in Professions" at the Illinois Institute of Technology. Widening of cultural and national consciousness can be done through innovative courses on topics like Indian Heritage, Indian Society and Culture, Ethical Values for Today's Society, etc.

It is frequently argued that values cannot be 'taught' in the classroom; they can only be 'caught' from the environment. The argument seems to be true only to a limited extent. Any body of knowledge which has a rational basis and a reasonably coherent conceptual framework can be taught in the classroom. The real difficulty is that no systematic attempt has yet been made to develop value related subjects for classroom teaching. (And also that no readymade models are available from abroad!) In the middle of the last century when engineering was first proposed as a subject for university teaching, it was argued, what is there to teach in this subject? It is best learnt by observation and practice. Fortunately for us, this argument was not accepted.

At another level, co-curricular and extra-curricular activities are included in the academic life for promotion of the overall personality of youth. They need to be organised more effectively with much larger participation of both teachers and students. Their scope needs to be widened to include many other student interests, students' societies and clubs. Organisation and promotion of these activities is the main function of students' unions in many foreign universities, as opposed to political agitations in our universities. An excellent independent initiative in this direction is that of SPICMACAY – "Society for Promotion of Indian Classical Music and Culture Amongst Youth".

Values Associated with the Management System

The value climate of academic life is very much affected by the style, ethos and values reflected in its system of management. This system includes the structure of power and authority, the decision making processes, policies and procedures for recruitment and promotion, methods for handling aberrant behaviour, etc.

The central purpose of the management system of a university is to uphold the values of academic life and to remove obstacles in the path of their realisation. It is expected to provide facilities, encouragement and support to the teachers and students in their joint pursuit of academic excellence. Unfortunately the emphasis today has shifted from this supportive role to a mere regulatory role. This regulatory 'administration' has tended to copy bureaucratic rules and procedures of government departments regardless of the hindrance they create in academic pursuits. The primary objective of supporting academics is lost sight of in the maze of ordinances, statutes, rules and procedures. Issues are decided on merely legalistic basis or administrative convenience rather than on considerations of academic values.

The academic life has become administration dominated. The centre of power has shifted from traditional academic authorities to non-academic administrators. Even Vice-Chancellors tend to identify themselves as administrators rather than as leaders of the academic community. The general body of teachers has become alienated from administration and reduced to the position of mere employees. No wonder there is a strong current of trade unionism amongst them. The "rigid working procedures and centralised control" of this non-academic administration, as noted by the 1986 National Policy Document on Education, is hampering the realisation of academic values. More than three years ago the UGC issued guidelines for decentralisation and grant of autonomy to academic departments to "provide freedom to teachers and students to make innovations, utilise creative talent, improve upon standards of education and research, and to quickly respond to academic and social needs". No action has yet been taken to implement these guidelines.

Some other important values related to management functions which need special emphasis in the university administration are: creation of effective channels of consultation and upward flow of ideas, monitoring and evaluation of the work done by teachers, academic departments and other staff, and a system for demanding accountability from academic and administrative authorities. Effective channels of communication and consultation should be established through a series of consultative committees of teachers, staff and students at departmental, faculty and university levels. Such channels promote the values of open, participative and democratic functioning of university. They create a sense of belonging and responsibility in members of the university family. Many good ideas which often originate at lower levels of hierarchy, can travel through these channels to the decision making levels. They help in finding acceptable solutions to many problems which otherwise simmer into bitterness and later lead to disciplinary problems.

Monitoring, evaluation and performance appraisal are the key management functions necessary for efficient working of any organisation. The laxity in academic life is largely due to the absence of such procedures. Gross neglect of duty goes unnoticed and unchecked. Academic and other malpractices are multiplying. Measures like self-evaluation, student-evaluation, peer-evaluation, which have evolved after considerable experimentation and research have only been talked about, and that too half-heartedly, in our country. It is essential that they be adopted with proper safeguards to ensure that they are not abused. Similar performance appraisal procedures should be instituted for all non-teaching staff and supporting service units.

The key centres of authority in the management system in turn should be made accountable to the academic community for performance of their basic task of upholding academic values, resolving problems in the path of pursuit of academic excellence and taking initiatives for change and improvement. This demand of accountability should curb the present tendencies of enjoying the power, prestige and privileges of the office without shouldering its responsibilities; of somehow 'running' the institution rather than working for its development. One way of doing this would be to require the academic and administrative authorities to prepare annual accountability reports. This report should outline the goals and objectives, the problems and challenges, efforts made in meeting those challenges, initiatives taken for improvement, the results achieved and the proposed future course of action. The report should be placed before and debated by the appropriate academic body of the university. Such procedures for ensuring mutual accountability and self-regulation are essential for healthy functioning of autonomous institutions in a democratic society.

Value Interactions with the Larger Social System

The academic life of the university is a small sub-system of the larger social system. The values of the sub-system are naturally affected by those prevalent in the larger system. In this larger social system knowledge and education are valued mainly in utilitarian terms, as accessories to rapid economic gains. The aim of entrants to university is to get merely the degree, which is the passport to good jobs and good life. It does not include developing sensitivity to the common good or the higher human values. Similar attitudes to education are evident in a large cross section of university teachers as well.

Students, teachers and other staff, bring to their work place all other negative values of today's Indian society, like caste prejudices, greater concern for filial connections than for propriety and fair play, less than respectful attitude towards women, overwhelming concern for

rights and hardly any for duties. Power and position are viewed as rewards meant for enjoyment rather than burdens of responsibility. A senior colleague once advised "you should enjoy the chair and not that the chair should enjoy you". There is a sense of arrogance of authority in those who have it, and a servile attitude in those who seek favours from it. Influence, pressure and personal connections are considered more effective than persuasive, rational arguments.

Another direction of value interaction is with the governmental agencies. The university is created, and its working regulated, by acts of parliament/state legislature. Its funds come from the government and its highest authority is appointed by the government. It is well known that Vice-Chancellors are appointed on political consideration. Political parties exploit students, and now even teachers, to fight their political wars on the campus. The concept of university autonomy, which has been evolved to safeguard the independent functioning of the university, free from political and governmental pressures, is not given much value both within and outside the university. It is mainly used as a shield to cover up inefficiency and inaction by both the university and the government.

Upholding values in academic life has admittedly become difficult in this hostile value climate of the external society. Many have developed cynical attitudes and given it up as a hopeless task. Yet it would be catastrophic to accept the defeatist stance that the values of academic life cannot be improved unless those of the larger society improve. The only source of hope for facing the present value crisis is the knowledge, wisdom and strength of character of the learned academics in the universities. These seats of learning are not passive, value-neutral institutions, merely swaying in the hostile value winds blowing in the society. They are the active value generating sources for not only holding academic ideals but also those by which the society ought to be regulated. This has been the role of the learned teachers right since the ancient times in our country. Even in modern times social criticism has been accepted as an important responsibility of the university. The challenges of this responsibility must be accepted so that the universities become active change agents for transforming the value system of the society. It is not that the universities do not have idealistic intellectuals capable of facing this challenge. Their numbers may be small but is not insignificant as is generally believed. The real difficulty is that they have not been able to come together to take a united, forceful and activist stand for upholding values. Their inactivity is the root cause of decline in values. As Gautam Buddha said "All that is necessary for evil to triumph is that good men should do nothing".

Human Resource for Development

Sartaj S. Mathur*

There is great concern in this country about the rapidly increasing population, which is expected to overtake the population of China soon after the turn of this century. This burgeoning trend has placed a heavy strain on the resources of the country and is considered a major obstacle for development in practically every sector. This is in spite of the fact that India is well endowed with resources, has set up a wide network for education and training, and has a large industrial base.

Resources, manpower, education and training is an unbeatable mix for growth and progress if properly utilized. Yet; during the last four decades and more, India has not been able to achieve a prominent position in the world. Today, we may have the third largest scientific manpower in the world and rank amongst the top fifteen countries in terms of our gross industrial output, but, every other person in India is illiterate, and, in terms of per capita income we rank near the bottom of the list of all nations. Apparently, we have not utilized our resources and opportunities optimally, particularly the human resources.

In today's world, the concept of self-sufficiency is obsolete. There are strong interdependencies, and each country has to recognize her areas of strength through which to play a role in the world market. Cost and the quality of a product are the two crucial elements to achieve success in this situation. Unfortunately, India has neglected both these elements, partially due to official policies but largely due to the indifferent attitude of our professionals and industrialists, who have not found it necessary either to engage in serious research and development activities on their own or to support such efforts at other research and academic institutions.

Recent changes in government thinking and opening up of the Indian economy have intensified the need for bringing in new technology. But we have neglected the crucial factor of keeping this technology updated through indigenous development in order to achieve sustained benefits. Ironically, during the period the economic policy was being revised, education and research, instead of receiving special attention got indifferent treatment from the government, and their budget during the last couple of years has not even kept up with either inflation or enrolment apart from much needed increases.

The United States of America is a unique example of a country which grew economically, industrially and scientifically in a relatively short period of time during and around the turn of the last century. The back bone of this development was the pioneering research work done in the universities and other scientific institutions.

This effort was fully supported by the industry who ultimately benefited from the innovations and new products that came out of this endeavour. Every American Government has supported this activity, which gave them the undisputed leadership in science and technology. But to bring this about, successive governments also, as a policy, realized that competent scientific personnel were essential to carry on with this programme. They, therefore, developed not only their universities, with strong emphasis on research and development, but also welcomed scientists from all over the world and offered them attractive conditions of work. It is no secret that immigrant scientists have made significant and in some cases major contributions in many critical areas which helped the United States to reach its stature as a number one country in the world.

India, on the other hand, over the last three decades has seen a steady flow of her scientific personnel to other countries, mainly the USA and Western Europe, for either job satisfaction or financial incentives or both. A stage has been reached when to go and settle abroad after a science, engineering or a medical degree, is considered to be a part of normal plan of a good student. It is even accepted in official circles that brain drain is better than "brain in the drain".

If India is a tiger and wishes to roar, it is not enough to open up the economy, invite foreign capital and new technology. It is necessary to establish facilities and introduce a new culture in industry to constantly update and in fact attempt to lead the technology of tomorrow. There is no escape from setting up a strong base for research, both basic and applied, in the universities as well as the industry with a close relationship between the two. In turn, it requires improving the quality of education at all levels so that well qualified students are available in adequate numbers at each point of entry, thereby ensuring availability of competent personnel to lead the research and development efforts of the country.

India has a very comprehensive educational system, including primary, middle, secondary and tertiary education providing professional courses as well as courses in arts, humanities, science, technology and medicine. Schools, colleges, universities and other academic institutions, however, have a diversity typical of the sub-continent. The standard of education and the competence of the graduates coming out of these institutions cover a wide spectrum. But what is important is the fact that there is a significant number of institutions in each category which consistently turns out graduates who are well educated and well trained. These students eventually have done well in their professional careers not only in India but also abroad, where they have to prove their worth in competition with

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graduates coming out of the best universities in the industrialized countries. India, therefore, undoubtedly has an infrastructure and the capability to provide world class education even though this base is relatively small.

The quality of education depends primarily on the competence and motivation of the teachers and on the facilities like library, laboratories, co-curricular and extra-curricular activities available to the students. It is no secret that these facilities do not exist to a satisfactory level in a large number of academic institutions, which in addition tend to be over-crowded. While competency of the teacher is a consequence of quality of education provided by the academic institutions, the quality of education to a large extent depends upon the resources and grants made available to these institutions by the central and/or state governments. Discussion on the financial aspects of education is outside the scope of this article, but, suffice it to say that exclusive dependence on the government and farcical low tuition fees will not help improve the educational standards in the country. Industries and the private sector must play an active role to support education as well as research.

Presuming that industries, sooner rather than later, will get involved seriously in research and development, it is essential that quality of education be improved at all levels, particularly, in the professional institutes. The anticipated increases in the demand of qualified and competent technical personnel in each category, there-

fore, dictates that there must be an increase in the intake of students in professional colleges, both by increasing the enrolment and by opening new institutions.

In order to reach and sustain higher educational standards, our academicians and academic institutions should also develop strong international linkages. Finally, just as the economy is now, belatedly, looking outward, it is necessary for our universities and colleges to do the same and make special efforts to attract students from other countries in large numbers. These students, can and must be charged tuition fees higher than the local students just as is done in the richer countries of the world.

This approach will help considerably in improving the standards of education and also in providing additional resources to these institutions. One should hope that if this programme is successfully implemented, Indian scholars instead of immigrating to foreign countries looking for better job satisfaction and financial returns will find it more rewarding to work within the country because of increased opportunities in educational and research institutions and also provide their expertise to Indian industries who with their help, may be able to acquire a competitive edge in the world market. One also expects that as a spin off, the unemployment position in the country will improve. In short, good quality education is an essential ingredient for developing and involving our large human resource for nation building and economic prosperity.

JUST OUT BOOK ON CHILD LABOUR

Economics of Child Labour & Fertility

By:

M. Sumangala • B.S. Nagarajan

1993, xxviii, 220, Tables, Figs. Demy 8 Vo.

ISBN 81-7018-733-8 • Rs. 190

It is a micro-level study of child labour in a developing country like India with its avowed welfare outlook, and discusses several aspects of the subject—economic, sociological and demographic. It also eminently focusses light on its linkage with fertility in a major state of the country, viz. Tamil Nadu.

Child labour is a serious problem in several states of the country. Existing literature does not do justice to the problem nor does it unravel motivations behind it. The present study is an innovative one. It underlines the importance and direction of causal relationship between child labour and fertility behaviour and their major antecedent variables, and will be found useful for future studies of the subject, as it will help policy formulation.

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NUCLEAR SCIENCE CENTRE

A Trend-Setter in Accelerator Based Research in India

Swapan K. Datta*

A Common Facility

The story of the inception, development and ultimate commissioning of the Nuclear Science Centre in New Delhi presents some unique features rarely found in the history of Indian academic institutes. The centre grew out of a long felt need among the university intelligentsia that internationally competitive research in diverse fields requiring the use of high energy ion beams would only be possible by establishing a common accelerator facility. The concept in itself is a departure from the prevalent tradition of promoting individual interests and points towards a wider horizon of progress through mutual cooperation. The University Grants Commission gave expression to this desire by setting up its first inter university centre in New Delhi to have a modern-day Pelletron tandem accelerator. The initial objective of making the accelerator facility functional in a record time of three years was achieved through the efforts of a few reputed scientists who practically sacrificed their personal research career so that the scope of research of a younger generation could be broadened. The planning of the leadership was put into execution by a group of very bright, hand-picked young people who set an example in single-minded devotion towards pursuit of their goal.

What is an Accelerator ?

The heart of the Nuclear Science Centre is a Pelletron tandem accelerator. All matter as we know is made up of atoms that include a nucleus and electrons. The nucleus, consisting of neutrons and protons is a very tightly bound system and much energy is needed to break it up or excite it so that its properties can be studied. A Pelletron accelerator is a device that produces highly energetic charged-particle beam of any material (from hydrogen to uranium) by passing it through a large electrical potential. When a charge q is passed through a potential V , energy gained $E = qv$. In the Pelletron this potential is built up on a metallic cylindrical terminal placed in the centre of a large vertical tank, by gradually bringing electrical charge carried on chains made of metallic pellets insulated from each other by nylon links. Hence the name Pelletron. The whole process is like building up water pressure (electrical potential) on a tank on roof top (terminal) by

carrying small amounts of water (electrical charge) in buckets (Pellet chains) and putting it in the tank. The total potential thus obtained in the present Pelletron is of the order of 16 million volts. The enormity of this figure is realized if one keeps in mind that the domestic supply line carries only 240 volts and long distance high voltage transmission lines carry about 11000 volts. For improved insulation to hold this high voltage in (to prevent something akin to thunder and lightning from occurring) the terminal is enclosed in an atmosphere of sulphur hexa fluoride gas at a pressure of 75 pounds per square inch (This is five times the pressure of the earth's atmosphere). The size of the tank which holds the gas is about 30 meters in height and 5 meters in diameter. The entire building which accommodates this structure is in the form of a 50 meter high tower.

High Technology

Sophisticated technology is involved in every stage of the accelerator. Apart from maintaining the high electrical voltage and the high pressure gas which pose problems of their own, a very high vacuum must be maintained in the entire beam tube about 100 meters in length, through which the charged particle ion beam must traverse. Otherwise, the ion beam is lost through scattering and collision with air in the tube. State-of-the-art vacuum pumps including Diffstacks, ion pumps, turbo-molecular, better pumps and cryo pumps are employed. Vacuum of the order of 10^{-9} mm of Hg is maintained inside the accelerator tube. High current (~ 350 Amp) are used in the magnets required to bend and focus the charged-particle beam. The L81 electronics, optical fibre technology and control of the machine through CAMAC interfaces and computer form the nerve centre of the system and requires a high degree of technical expertise for operation and maintenance. Precise mechanical alignments, often through the use of Laser beam, has been a prime requisite for successful ion beam delivery. Cryogenic developments using super conducting helium and radio frequency technology at 100 MHz and Kilowatt power levels are envisaged in the future augmentation programmes.

Modern Research Equipment

While the accelerator provides the beam required for doing research, many more equipments are needed to translate the findings at the sub atomic levels to the macroscopic world of human perception. Sophisti-

*Convenor, Accelerator Users Committee, Nuclear Science Centre of U.G.C., New Delhi-110 067

ated research equipments such as magnetic reaction analyzer (HIRA) and a Compton suppressed Germanium detector array (GDA) have been erected by a collaboration of university faculty members and NSC staff scientists. The HIRA uses a collection of electric and magnetic dipole and quadrupole fields to separate out various reaction products generated when the heavy-ion beam interacts with a target material. The GDA is used to study energy levels of nuclei by detecting electromagnetic gamma radiation emitted during such nuclear collision. Both equipments bring within the reach of the Indian scientists, possibilities of doing research at the forefront of nuclear physics and set a landmark in the development of nuclear science techniques in India.

Condensed matter physics and materials science investigations form the other important branch of studies in which the accelerated beam is widely used. With the help of a DST funded project, several universities have now joined forces in erecting a beam line, complete with ultra high vacuum scattering chamber and associated equipment. A group of atomic physicists is pushing for a beam line of their own, with modern equipments for x-ray diffraction and electron detection and analysis. Biologists are setting up their experiments as well.

Widespread Use

The family of users have been growing steadily since the Pelletron was commissioned in July 1991. At present there are 32 universities, 14 colleges and 10 other research institutes engaged in performing experiments at the Centre. During 1992, 18 projects in nuclear physics, 21 projects in materials science, 5 projects in atomic physics and 1 project in biology have been allotted beam time. The accelerator runs round the clock, seven days a week, except for scheduled maintenance periods. The overall uptime of the machine has been 96%. The UGC also provides special funding to university faculty members to hire student research fellows to perform experiments at the Centre. Currently there are 37 such funded projects. Annual expenditure runs to about Rs. 25 lacs on this account. Quality research work is being regularly done and publications in reputed journals have begun to come out even within the short span of one and a half year of operation.

Future Upgradation

The path to progress, in this case, lies in the direction of attaining more and more energy for the delivered ion beam. As explained earlier, large energy is required to split the nucleus, but this is more so for heavier elements, because the incident projectile has to overcome the large electrical repulsion between itself and the

target nucleus (the electrical charge being higher for the heavier elements). A linear accelerator, employing super conducting radio frequency cavity resonators has been planned, sanctioned and is being built with the help of engineers at the Argonne Laboratory, USA. The entire structure will be built in a modular way, so that stages can be attached as and when the funding comes. Eight such modules are envisaged and this will raise the energy effectively by a factor of 2.5.

The advent of the Nuclear Science Centre as an inter-university research facility is already beginning to have its impact on the university populace. A typical day at the Centre finds the Pelletron crew working at their controls, youthful faces peering on the computer consoles busily doing their data analysis, seminars being held, support laboratories humming in their diverse activities – all forming together a harmonious background on which some day lights of new discovery will shine. The future is for the young to build. The seed is sown; hard labour and dedication will bear its fruit.

UNIVERSITY NEWS

A Weekly Chronicle of Higher Education

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Institutional Planning

K. Bhaktavatsal Rao*

Introduction

Education is a powerful tool for social change and the realisation of national objectives in any democratic country. Higher education exerts a great influence on socio-cultural development and technoeconomic development. It helps in widening of the frontiers of knowledge. It helps in critical thinking and promotes scientific temper. It provides intellectual and professional leadership to the country. It aids at cultural cohesion and creates awakening in the society. It is a process of continuity. Cultivation of human values is the outcome of the spread of higher education.

After independence Radhakrishnan Commission stressed that higher education should aim at vocational pattern and also for inculcating in the minds of young, ideas of fraternity, patriotism, citizenship, intellectual analysis, imaginative insight and integrated way of life. Emphasis was laid upon culture which consists of intellectual alertness, receptiveness to beauty, humane feeling and social enthusiasm. Attitudes and way of life are neither taught in textbooks nor in the lecture room and laboratory. The Education Commission (1964-66), Magna Charta of Education, observed that the situation in higher education was unsatisfactory and even alarming in some ways, that the general standards have been falling and that rapid expansion has resulted in lowering quality.

The most important recommendations mentioned below relate to regulation of numbers, improvement of quality, equity and social justice, and toning up of management and administration. They are (A) Educational structure 10+2+3 scheme, (B) Selective admissions, (C) Pace-setting institutions, (D) Inclusion of additional content of heritage/Independence movement history, (E) Equity measures to the weaker sections, and (F) Improvements in management and administration.

Steps were initiated to achieve some of the suggestions/recommendations/objectives shown by this august commission. Government of India Policies on Education (1968, 1979) (i) emphasized the need to produce young men and women of character and ability committed to national service and development, and (ii) Proper liaison should exist between universities, colleges and society. Outcome of these policies were the restructuring of courses and launching of National Service Scheme.

National Policy on Education (NPE) was adopted by Parliament in 1986. Programme of Action was drawn up in the monsoon session of the Parliament. The concept of national system of education, reorganisation of content and processes of education, vocationalisation of education, improvement of quality at all levels, consolidation of resources in higher education, welfare of teachers/students, training programmes of teachers were envisaged in it and task forces were constituted for implementation of NPE 1986. It was contemplated to inculcate greater rigour and discipline in academic pursuits among teachers/parents/students, to make arrangements which facilitate autonomy for experimentation and innovation, and above all, a rededication of all – political leadership, administrative personnel, the parents, teachers and students – in this great task of nation building.

During the last three years Operation Black Board, Navodaya Vidyalaya Scheme, Literacy Drive through National Literacy Mission, opening of Autonomous Colleges, Academic Staff Colleges have made headway.

Government of India appointed the Acharya Ramamurthi Committee to review the National Educational Policy and submit a report within six months. While addressing the members of Consultative Committee of Ministry of HRD on 18-5-90, the then Prime Minister emphasized the need to make education accessible to the disadvantaged, socially backward people, including ethnic and other minority groups. He expressed government's desire to put education in the perspective of employment and removal of poverty (29%). To bring about a big change several impediments have to be overcome in the economic/administrative fields. The Ramamurthi Committee submitted its report in December, 1990. The Committee urged that academics must be involved in the decision making process at the central & state levels.

Post Independence Scenario

The scenario of higher education in our country after independence exhibits phenomenal growth in institutions and enrolment.

	Universities	Colleges*	Enrolment
1950-51	27	695	3,96,745
1970-71	105	3694	31,12,404
1980-81	123	4722	27,52,437
1985-86	149	5723	35,70,897
1988-89	150	6,000	45,00,000
			(estimated)

* Joint Director (Retired), Telugu Akademi, Hyderabad.

*Maharashtra shows increase of 226, & A.P 94 in the period of (81-82) to (85-86), J & K declined by (1)

Science enrolment	1950-51	32%
	1985-86	20%
Commerce	1950-51	9%
	1985-86	21%
Arts	1950-51	46%
	1985-86	40%
Women	1950-51	14%
	1985-86	30%

Since the '60s dependence on foreign higher education has come down sharply. About 1,50,000 qualified scientific & technical personnel are produced every year. The total stock of scientific and technical qualified manpower is estimated at 2.5 million, third largest in the world. In the National Educational Testing done for the J.R.F shows number of passes as 412 out of 3475 candidates at the test held on 16-6-85 & 1287 out of 11267 candidates at the test held on 29.9.85.

In the first six five year plans an amount of Rs. 1914 crores or 32% of the total expenditure/outlay on education was provided.

Higher Education in A.P.

The higher education scene in A.P. is equally interesting.

	1980-81	1985-86	1989-90
No. of Degree Colleges	247	350	368
No. of Students	1,42,000	2,14,000	3,03,000
No. of Teachers	10,230	11,530	12,050

No degree college was started during 1986-87. Seventh plan outlay was Rs. 8,061 lakhs.

Amount in the Budget	1985-86	105.66 Crores
"	1988-89	156.64 "
"	1989-90	221.93 "
"	1990-91	185.47 "

Out of 1090.39 crores on education in A.P. (1990-91) 6% of the plan budget is for higher education and 18% of the non-plan is for higher education.

Only 55 Government Colleges have permanent buildings out of 165 colleges (33%). An amount of Rs. 150 crores is required if construction of buildings is contemplated for the rest of Government Colleges. The position of private colleges is far better as the managements are in a position to show matching share, hence more than 50% colleges have permanent buildings and permanent affiliation.

At all India level the % of intake of age groups (17-23) in higher education is 4.8% whereas Japan has 30%, USA 55%, USSR 18%.

Issues and Problems

The issues and problems in higher education are :

- (1) the system is irrelevant to the national needs;
- (2) unit cost of higher education is high (Genl. edn. Rs. 686);
- (3) Production sectors are not involved in the system of higher education;
- (4) Marked mismatch in terms of field and specialisation of graduates;
- (5) No serious attempt to regionalise higher education in rural areas in respect of
(a) Objectives, (b) Content, (c) Method of instruction, and (d) Their needs;
- (6) Failure to create additional employment;
- (7) Higher education inflation vis-a-vis weak association between performance in examination and job performance/world of work i.e. gap between "World of learning" and "World of work"; and
- (8) System of higher education is rigid, formal, discriminatory, socially disparity creating leading to economic inequality.

The present system of higher education is now in a state of crisis due to

- (1) Uncontrolled and unplanned expansion,
- (2) Inadequate inputs – money/materials/ talents,
- (3) Falling standards in large proportion of institutions,
- (4) Weakening of student motivation, and
- (5) Increase of educated unemployment.

Out of the several issues/problems/snags in higher education, urgent attention is required of the authorities/ college teachers/universities to the following :

1. Manpower planning,
2. Utilisation of resources,
3. Selection mechanism,
4. Training of teachers,
5. Evaluation of personnel,
6. Rewarding the personal, and
7. Settlement of grievances.

Institutional Planning

At present planning is centralised in deciding everything at the top hoping that various units will follow what has been centrally decided. Added to these various steps in administrative/accounts clearance of the amounts consume lot of time and the unit officers are helpless when the amounts lapse. Control and ownership mechanism exists in the present system of implementation of schemes of education.

Institution or college is an organisation. It is a unit of activity and is the base for planning. It has interaction with external environment and dynamic role to play with its external environment. It has to face politicalization of the campus, socio economic changes and declining role of community.

Decentralism in institution building is a recent phenomenon in China. The importance of the local units like communes is greatly stressed, which leads to development and strengthening of institution, unit of governance/living. It is a movement from organisation maintenance to institution building, leading to effectiveness, efficiency and approach of experimentation.

Main objectives of institutional planning are

- (i) Involving teachers in formulation and implementation of plans,
- (ii) Giving adequate freedom to teachers for new ideas,
- (iii) Providing an atmosphere for creative work/job satisfaction,
- (iv) Providing a chance to reduce orientation expenditure and utilising resources in a proper manner,
- (v) Involving local community to join hands without the institution to improve, and
- (vi) Imparting realism and concreteness to educational planning.

In the process of educational planning whether it is at the unit level or state level the steps are policy to strategy, strategy to planning and planning to implementation. At the level of institution study of the background, needs, resources survey, priorities, aspects of implementation and evaluation are to be borne in mind.

The characteristics of institutional plan are need based, goal oriented, specific in aim/method and procedures, optimum use of resources, cooperative venture, confidence in the staff, rapport with the community, developmental plans, flexibility, reflection of state/central policies.

If university is an agent of change, the college is a sub-agent/centre/focal point of implementation of change. The plan at the college level should be made short term/long term. At the regional level it must be discussed/reviewed and at the state level it must be

finalised and the sharing of expenditure by the centre/state can be worked out.

UGC has already laid down norms for the starting of institution, development of colleges and making them as centres of excellence. Stipulation of 180 working days, 40 clock hours for teachers, 30 clock hours in a week for the students, 25% of the workload for the tutorials, 75% attendance, sessional/semester/year end examinations, lecturing not more than 3 clock hours are some of the conditions stipulated for the proper functioning of a college. For the development of colleges UGC has been releasing grants under Basic Grants (Faculty Improvement, Books & Journals, equipment), Developmental Grants (Buildings, Auditorium, Special equipment), COHSIP, COSIP.

Strategies in institutional planning are (A) Improving physical facilities; (B) Improvement of teachers; (C) Extracurricular activities for students; (D) Community Programmes; and (E) Implementation and evaluation.

Qualitative improvement requires (1) Improvement in teaching, (2) Methods of instruction, (3) Usage of library, (4) Equipping the laboratories, (5) Proper Teaching aids, and (6) Proper coverage of curriculum.

Resources for the institutional planning at present appear to be very limited. NPE envisages participation of community in making resources available. Fees, grants, contributions/endowments are the present resources. 10% in the central and 30% in the state budget are the need of the hour for the improvement of institutions. Educational expenditure in the country should be raised from the present 3% to 6% G.N.P.

The role of principal in institutional planning is quite significant. He is the leader, activator motivator, custodian, public relations officer, administrator, academic planner, initiator of local academic/cultural/sports activities, effective supervisor and finally a programmer, and protector of student community. College is a source of inspiration/guidance/unit of welfare measure to the society under his guidance, with the coordination of his colleagues.

Concept of microlevel planning/district level planning equally applies to institutional planning. Paradoxical situation in higher education with reference to enrolment, expansion, and demands of under privileged/minorities has to be analysed and remedial steps are to be initiated to achieve the broad aims – social transformation and social liberation.

Higher education in India faces a challenge between quantity versus quality. We have to strike a balance between the two demands.

Thiruvalluvar in the work *"Thirukkural"* says :

*"Since all the learned whatever
Land or Town could deem their own
Why won't one throughout one's life
Keep on learning alone".*

English as the Link Language

'In our anxiety to promote the regional languages, we should not undermine the importance of English at higher educational levels,' said Prof. K. Venkata Ramiah, former Vice-Chancellor of Kakatiya University while speaking at the inaugural function of the Silver Jubilee celebrations of the Department of English of the Kakatiya University. In spite of Hindi being the link language, Prof. Venkata Ramiah said that English had always been the 'defacto' link language as it helped the nation to keep in step with the technological progress world over.

Appreciating the wisdom of the three-language formula in the school curriculum as an integration factor in the national life, Prof. Venkata Ramiah cautioned that any deviation from it might imperil the unity of the country. He also felt that there was still the need to continue English at Civil Services examination as cohesive force in the wake of conflicting linguistic interests.

Referring to the agonising dichotomy of the knowledge imparted at the educational institutions and the work in the practical social sphere, Prof. Venkata Ramiah deplored the deteriorating quality of Indian contribution in the international context. The blame for this, he said, would squarely rest on the educational system in its failure to bridge the gap between the ideas and their translation into reality.

Prof. Venkata Ramiah recommended that proper accent should be placed on primary education in order to revitalise rural productivity and the general well being of the masses. He called for synchronising education and human resource

development to accelerate the national development.

Delivering the inaugural address Prof. Nissim Ezekiel, poet, playwright, critic and professor of English of Bombay University referred to the need to relate literature to other arts like theatre, music, painting and dance. Reading classics or study of literature should be a life-long process since the growing experience of man would render every work of art 'new' in the altered situation, he said.

Prof. Nissim Ezekiel suggested that the Department of English should provide an opportunity to the students, both old and new, to look upon their study of literature not as an idle deposit but a growing and expanding response to life to discover its depth and relevance.

Recalling the fact that the poet is not a special kind of individual but every individual is a special kind of poet, Prof. Nissim Ezekiel said that a work of art never completes its meaning and has to be constantly discovered by the student time and again in the light of wisdom he has gained.

Dr. K. Jayashankar, Vice-Chancellor of the Kakatiya University presided over the function and released the 'Kakatiya Dissertations in English Studies'.

In his valedictory address Prof. S.K. Verma, Vice-Chancellor of the Central Institute of English & Foreign Languages (CIEFL), Hyderabad, said "As the main language of transnational and international communication, English continues to serve as our 'window on the world.'"

Prof. Verma said that in addition to being an associate official language, English had been both an in-

strument of intellectual communication and a means to promote social mobility. It is a national asset of supreme importance as the medium of instruction and examinations at the tertiary level, the Vice-Chancellor said.

Referring to the role of the teacher, Prof. Verma said that the sweetness of the visible world lies stored in invisible literary hives and the main function of the teacher was to prepare the students to extract honey from these hives.

As the country represents a socio-linguistics areas with a variety of linguistic and cultural patterns, Prof. Verma observed that the teacher should re-orient himself to multilingual setting and expand the existing models to suit socio-cultural environment for revitalising the English language teaching in India.

Dr. K. Jayashankar, Vice-Chancellor, said that alumni associations could link the past and the present of the institution while playing effective role to arrest the erosion of values by constructive participation in the academic activities.

Quoting couplets from Urdu and Telugu poetry to illustrate his point Dr. Jayashankar said that an unguarded lapse in a moment might undo the achievement of centuries. It was therefore necessary to promote positive and helpful attitude to life and the students of literature could perhaps contribute impressively in this direction, Dr. Jayashankar added.

In his presidential address Prof. Issac Sequeira, Senior Academic Fellow of American Studies Research Centre (ASRC) at Hyderabad explained the variety of dramatic modes world over and emphasised that through drama alone one could

guage the profundity of life. A student of literature should learn to relate life and literature to each other by responding to drama as a mirror of life and as an instrument of social change, Prof. Sequeira concluded.

As part of the celebrations, Guest of Honours Lectures were also arranged. Delivering a lecture on 'Communication between Teacher and Students', Prof. Nissim Ezekiel said that a constant innovative approach to teaching was necessary to render the teaching in the classroom a pleasant exploration of the grace of life and literature. He further said that a dry method could not be prescribed and every teacher had to discover a way of his own to reach the students meaningfully.

Speaking on 'Perspectives of Indian Novel in English,' Prof. K. Venkatachari of Osmania University presented a scholarly analysis of Indian novel in English, surveying the wide variety of fictional techniques in Indian English.

In his lecture on 'Comparative Literature and the Disinherited English Clerisy,' Prof. C. Subba Rao of Dr. B.R. Ambedkar Open University suggested that English could serve better the needs of the country by interacting with the regional languages. Prof. Subba Rao said that the country had happily an excellent literary atmosphere with rich heritage and English would profit by it. He further said that the literatures of India would get modern orientation by the fruitful interaction. The isolated existence of the language departments was a thing of past, Prof. Subba Rao felt.

Inter-disciplinary Research

A one-day Inter-Disciplinary seminar was recently organised by Departments of Mathematics, Statistics and Operational Research and Computer Science & Application of Kurukshetra University.

Inaugurating the seminar Dr. S. Arya, Vice-Chancellor, Kurukshetra University said that according to his vision the coming times would be for inter-disciplinary research. The researchers in the traditional fields shall be left isolated and their work shall not be of much relevance for the socio-economic scientific development and technological growth. He also pointed out that without support of relevant data and their statistical analysis and inference, the research in the scientific as well as not-so-scientific and social fields was of little significance.

Professor Karmeshu from JNU spoke on modelling and simulation. He explained how the concepts of modelling and simulation with emphasis on three emerging fields of Catastrophe theory Synergetics and Dissipative structures were bringing and would bring the isolated and disconnected fields of Physics, Chemistry, Biology, Economics, Psychology, Sociology, Management, Climatology, etc. under an integrated umbrella of them. He concluded his talk by illustrating how real life problems, full of nonlinearities and chaos could be solved by simulation and emphasized that a computer was an indispensable tool for the simulation work.

Prof. K.K. Aggarwal from Regional Engineering College, Kurukshetra, explained the distinction between faults and failures of a software package, with a very simple example pertaining to integer solutions of a quadratic equation over the domain of integers. In his expository talk on software reliability he explained various factors and parameters which gave rise to uncertainties and that ultimately compelled to give top priority to the analysis of software reliability. He also highlighted the inter-dependence of the degree of reliability, the CPU time and the cost of the package.

Dr. P. Avtar presented a detailed account of computer vision and related problems. He discussed various applications of computer vision in the recognition of text and characters and their identification and isolation from the complex environmental background in various situations such as space capsules, documentation, linguistics, etc.

Prof. Krishna Gopal from Regional Engineering College, Kurukshetra delivered a talk on 'Computer Based Control Systems'. He explained the concept of control systems and its applications in automation of Plants, such as production of cement, management of thermal power plants and 'air and surface traffic', etc. He also clarified the applications of analog controllers and the Host Digital Computer in an industrial environment by implementing the concept of Distributed Computer Controlled Systems (DCCS).

Population Education in Higher Education

The Department of Adult, Continuing Education & Extension of the Delhi University recently organised a one-day discussion on population education programme under the service area universities. The programme was attended by the representatives drawn from service area universities, (Uttar Pradesh & Haryana), Teachers-in-charge of Population Education clubs under Delhi University colleges, representatives from Delhi University Departments and students of Delhi University. Dr. K.G. Jolly, Institute of Economic Growth and Dr. R.C. Gupta, Research Officer, University Grants Commission acted as resource persons.

Explaining the aims and objectives of the programme, Mr Rajesh, Project Officer, Department of Adult, Continuing Education & Extension, said that the Population

Education in Higher Education was an attempt of University Grants Commission to provide technical resource support at all levels of education. Population Education permeates the entire system of education: the formal school system introduced in the sixth five year plan, Non-Formal Education Programme and the Higher Education System. The areas of technical resource support are learning materials (Print & Audio-visual), Training, Curriculum Development, Research, Monitoring & Evaluation & Documentation & Dissemination.

Dr. K.G. Jolly, Institute of Economic Growth, pointed out the meaningful relationship between literacy and Population Growth and stressed the need to mobilise the entire university section i.e. teachers, students and karmacharis for this activity. We require female's education and women's development to be linked with these activities, he said and stressed on KAP i.e. Knowledge, Awareness and Perception at all levels to meet the challenges of the society at large. He highlighted the facts that preference be given to the revised family-welfare strategies, age at marriage, spacing between children, child survival measures, women's education, women's employability and women's employment, gender equality, inter-spouse communication and women's role in decision-making, raising the status of women in the society, responsible parenthood and small family norms.

Dr. R.C. Gupta, Research Officer, University Grants Commission briefly detailed the efforts of the Commission to bring population education clubs to mobilise the college teachers and the students and through them the related community. U.G.C.'s major thrust was to create awareness so as to change the perception of the youth towards the quality of life, he added. He supported the move to include the following points in the curriculum,

such as (1) AIDS prevention and education; and (2) Drug Abuse-prevention and education in central theme; in planning the activities in population education in higher education, in the VIII Five Year Plan.

Mr. V.K. Dixit, Department of Adult, Continuing Education & Extension provided various facts and cases about AIDS and requested the universities under the service area universities to take immediate steps to incorporate AIDS (Acquired-Immuno-Deficiency-Syndrome) under Population Education Programme.

Dr. M.R. Dabas, M.D. University, Rohtak, narrated the various activities conducted under population education programme in his university. He said that in his university Academic Council had given weithage of some marks to the students as was normally given to the N.S.S. students.

Mr J.P. Dubey, Deptt. of Adult, Continuing Education pointed out one important area of population education "Adolescent". We need to generate materials for Adolescent under population education programme. Mr. Dubey said that there was no taboo in our family or society to get information on sex education and AIDS either through media or through inter personal communication.

Dr. R.D. Sharma, Gurukula Kangri University, Hardwar was of the opinion that under population education clubs activities, not only the debate, essay competition, but other similar activities should also be taken up. Population education, he said, must be incorporated in the curriculum at undergraduate and postgraduate levels. Through the curricular efforts the youth would be able to assimilate the core-concepts on population education. He was of the opinion that small family norms population education pro-

gramme and literacy activities must go together.

Mr. D.D. Aggrawal, Incharge of the Department of Adult, Continuing Education opined that debate, essay competition and drama-competition under population education programme had impact only for the short duration and even participation of large numbers of youth was ensured under these activities. Under these circumstances, efforts must be made to incorporate population education in the curriculum at undergraduate and postgraduate levels to provide the acceptability of the programme.

Ms. Promila Anjali Mehta, Project-executive, family life education project, who distributed 35 kits of books on population education including family life education, informed the participants about various activities of her Institution and requested the department to collaborate the activities with the University's efforts on Population Education in Higher Education. She elaborated several aspects of sex education and family life education through overhead projector and discussions as well.

The following recommendations were made at the seminar :

(1) A plan of action should be drawn by Population Education Research Centre of the Department to closely interact with the service area universities in Uttar Pradesh, Haryana and Union Territory of Delhi through common action plan in the VIII Five Year Plan.

(2) Universities at all the levels should take suitable steps to provide for a modality of formal recognition/credit to students participating in population education activities like Rohtak University.

(3) Population Education in Higher Education would organise inter-university and inter-college

activities on various aspects of population education such as debate, quiz-contest, declamation-contest and essay competition.

(4) Population Education Programme under various universities should interact with other departments, colleges and adjoining areas adopted by the university/college to provide AIDS education and information campaign.

(5) Motivational materials be developed for students and teachers with the support of experts.

(6) Field-testing of motivational materials would be done at all the levels before distribution.

Vacation Students Programme

The Inter University Centre for Astronomy & Astrophysics (IUCAA) invites applications for the third Vacation Students Programme (VSP). Students selected under the VSP will spend six weeks at IUCAA to work on specific research projects under the supervision of the IUCAA faculty. The programme will conclude with seminar presentation of the projects by the participants, a written test and an interview. Those who perform well will be preselected to join IUCAA as research scholars after the completion of their degree.

Students who enter the final year of the M.Sc. (Astronomy, Mathematics, Physics)/B.Tech./B.E. courses in the academic year 1993-94 are eligible to apply. Application giving the academic record of the applicant as well as two letters of recommendations from teachers, mailed directly, should reach the Coordinator, Core Programme, IUCCA, Post-Bag 4, Ganeshkhind, Pune-411 007 by March 1, 1993. The selected candidates will be informed by April 1, 1993 for the programme to be held from June 1-July 15, 1993.

News from UGC

Countrywide Classroom Programme

Between 1st March to 6th March, 1993 the following schedule of telecast on higher education through INSAT-1D under the auspices of the University Grants Commission will be observed. The programme is presented in two sets of one hour duration each every day from 1.00 p.m. to 2.00 p.m. and 4.00 p.m. to 5.00 p.m. The programme is available on the TV Network throughout the country

Ist Transmission

1.00 p.m. to 2.00 p.m.

1.3.93

"Listening to Molecules – Photoacoustic Readings"

"Yours Sincerely"

2.3.93

"Electrochemistry of a Cell"

"Communicating through Black-board"

"Diabetic Retinopathy"

3.3.93

"Action Plan on Conservation of Old World Fruit Bats"

"Pre-Historic Site at Arangpur"

"Manufacture of Newsprint"

4.3.93

"Electronics – V. Amplifier"

"Sticks in Rhythm"

"19th Century Russian Literature : M.Y. Lermontov"

5.3.93

"Climatic Past at Nalsarovar"

"By the People – V. Using Political Resources and Influencing Political Decision"

6.3.93

"Aesthetics of Film Adaptation – I"

"In Search of Roots"

"Week Ahead"

IInd Transmission

4.00 p.m. to 5.00 p.m.

1.3.93

"Listening to Molecules – Photoacoustic Readings"

"Yours Sincerely"

2.3.93

No Telecast

3.3.93

"Artificial Spawning In Frog"

"Corrosion – I"

"The Clock That time Us"

4.3.93

"Emerging Trends in Computers"

"I am a Bhil"

"Shelley – The Romantic And The Idealist"

5.3.93

"Statistics – I"

"Form And Idea – II"

"The Week Ahead"

6.3.93

No Telecast

News from Abroad

Training Programme in Educational Planning and Administration

The International Institute for Educational Planning (IIEP), Paris, invites nominations for its XXIXth Annual Training Programme in Educational Planning and Administration (1993/94). The programme is proposed to be held from 1 September 1993 to 31 May 1994.

The nine-month Training Programme addresses itself to practising educational planners and administrators, as well as to those who have (or will have) training responsibilities in related fields. The programme is action-oriented and designed to improve the technical skills of participants in educational planning and administration.

The programme seeks to prepare participants for important tasks of analysis, design, preparation, implementation, follow-up and evaluation of policies, strategies and plans for the development of their national education systems.

The general structure and content of the programme reflects the main experience and developments in educational planning and administration in various countries, and is based in particular on research work conducted by the IIEP.

The training programme consists of two main phases, i.e. (i) in-country individual work based on training materials sent by IIEP, and (ii) intensive training at the IIEP Headquarters in Paris.

The course makes extensive use of team work and the active involvement and contribution of each trainee on a full time basis. It includes individual study, simulation exercises, seminars and work in small groups, combined with lectures, discussions, visits, micro-

computer work and comparing national experiences.

The last date for receipt of nominations in the prescribed form is 15 April 1993.

Further details may be obtained from the Training Unit, International Institute for Educational Planning, 7-9 rue Eugene-Delacroix, 75116 Paris, France.

Master's and Ph.D. Programmes in Human Ecology

The Faculty of Medicine and Pharmacy of the Vrije Universiteit Brussels, Belgium offers G.G.S. Master's and Ph.D. Programmes in Human Ecology under the auspices of the World Health Organization and endorsed by UNESCO (Man and Biosphere Program). The objective of the programmes is to promote understanding of human

interaction in an ecological framework in all its complexity and stimulate thinking about solutions to environmental problems by means of a holistic interdisciplinary approach.

This two-year Master's Programme is taught in English and the course contents include : Environment and Ethics, International Environmental Policy and Law, Environment and Development, Agriculture and Environment, Climatic Change, Soil Science and the Rehabilitation of Damaged Land, Chemical Aspects of Air Pollution, Water Quality, Waste Water Treatment and Water Supply, Oceanography, Environmental Psychology, Waste Management, Environmental Management, Ecology and Industry, Environmental Movements, Environment and Criminality, Environmental Issues of Recreation and Tourism, Diet and Health, Infectious Diseases in Developing Countries, Toxicology, Ecotoxicology, and Biology and Demography

Further information and application forms may be obtained from Department of Human Ecology, The Admissions Administrator, Free University Brussels (VUB), Pleinlaan, 2 B-1050 Brussels, Belgium.

GOA VIDYAPRASARAK MANDAL

POST BOX NO. 10

PONDA, GOA

Applications stating Full name, Address, Age, Educational qualifications and experience are invited for the following posts for the proposed COLLEGE OF EDUCATION starting from next academic year i.e. June 1993-94.

A) PRINCIPAL

B) Full-time Lecturers in Education to teach teaching methodologies (i) English (ii) Marathi/Hindi/Konkani (iii) History-Geography (iv) Science (v) Mathematics.

For all the above posts candidates must possess M.A./M.Sc. and M.Ed. with at least 55% marks and a good academic record.

For the post of PRINCIPAL a candidate must have 10 years of experience of teaching as a Lecturer in a College of Education. Candidates must

1) account for breaks, if any, in careers

2) send their applications through proper channel, if already employed.

The scale of pay, allowances and other service conditions as laid down by Goa University and rules and regulations of the Directorate of Education, Government of Goa.

Reservation of posts for SC/ST as per rules.

Completed applications with above mentioned details, copies of statement of marks from S.S.C. onwards, caste certificate if belonging to backward class should reach the undersigned within 15 days from the date of publication of this advertisement.

Date : - 31-01-1993

B.K. Khandeparker
Chairman,
Working Committee
Goa Vidyaprasarak Mandal

How Relevant is the Title?

C. Parvathamma*

Samuel C. Mathivaanan, *Voluntary Agencies and Social Change*, Delhi, Manas Publications, 1991, Pp. 133, Rs. 180.

The book under review with the above caption is rather misleading. One would naturally expect the book to discuss how voluntary agencies have brought about social change in India at least since independence. But it is certainly very disappointing to wade through the pages to find very little that could match with the title.

There are 7 Chapters, five in Part A and two in Part B. In the first four chapters, there is elaboration on voluntary action and social change. It really requires lot of patience and time to follow what that author is trying to convey. In Chapter One : Voluntary Action – a conceptual analysis, the author states that there are more than 700 small and medium sized voluntary organizations which roughly cover some 20,000 villages in remote backward and tribal areas. The chapter abounds in quotations ranging from the constitution, planning commission, several political leaders, Vivekananda, Gandhi and a host of others.

In Chapter Two : Forces of Social Change, it is said that the term 'change' is wholly neutral yet it is also described as "total transformation, modification, alteration or variation in the functional, social, economic, cultural, physical and other spheres of life over a period of time". This is in contrast to an earlier statement that

"change is the characteristics of every human society. It is the law of nature".

The problems of predictability of change, sequences, internal, external and accidental change and finally the magnitude of change are mentioned next. Instances are so common place, one wonders whether the chapter is just an extension of classroom lecture.

Under Types of Changes, the author scales new heights when he discusses individual change. "Individual change is the internal transformations of one's ownself. In other words it is a change in the psychology of an individual". Then social change, social development, social progress, economic change, economic development, economic growth, cultural change, physical change, finally planned or directed change, each with sub-heading having 2-3 paras recalling different author's is the stuff.

In the chapter on Change Process factors like motivation, awareness, action and finally refinement are analysed as different phases involved in the change cycle. Also resistance and opposition to change, the role of technical specialists, along with the costs and benefits to the social system are described. It is said that social change should focus on community grouping for both gaining support and better results.

It is only in Chapter 5: Voluntary Organizations and Social Change, which is the longest, about 30 pages,

the author chooses to make reference to some of the voluntary organizations working in different areas in brief. Nearly twelve major headings each with a number of subdivisions is listed at the beginning of the chapter. Much of this seem to run parallel to government programmes. Somewhat detailed description is available only about the agencies working in Tamilnadu, while for the rest of the country there is very little material. Even the other three South Indian States find very little reference.

Chapters 6 and 7 constitute Section 'B'. Measurement and Assessment of Change, Social Indicator – a conceptual indicator deal with all kinds of hypothetical situations. They focus on methodological issues involving a good deal of jugglery suggesting "a strong research bent of mind with a skill to design and to introduce change agent is needed". These two chapters should have come in the beginning rather than at the end. Anyway they remain where they are with little meaningful connection with the rest of the book.

The book, I am afraid, is not very useful even to those working in voluntary organizations. It could have concentrated on one or two themes and evaluated the programmes both sponsored by the government and those undertaken by voluntary organizations. Though the printing is good, innumerable spelling mistakes, wrong usages and above all abbreviations without being expanded or given in a separate list, makes it difficult to decipher and follow what the author is trying to convey. Noted social workers and their contributions, for instance Bunker Roy do not find a place. Substandard publications abound and there are publishers to promote!

*Director, Centre for Research in Rural and Tribal Development, Mysore-570 002.

RESEARCH IN PROGRESS

A list of research scholars registered for doctoral degrees in Indian Universities

SOCIAL SCIENCES

Library & Information Science

1. Sunilkumar, K. **An evaluation of school libraries in Kerala with special reference to library implications for plus two stage of school education.** Kerala. Prof K A Isaac, 17-26, Jagathy, Thiruvananthapuram.

Sociology

1. Sharma, Preeti. **Apradh ke nivaran mein nyayalaya ke bhumika: Ek samajshastrya adhyayan, Jila Nyayalaya, Sagar ke paripekshya mein.** H S Gour. Dr Rammurti Ram.

Social Anthropology

1. Satdeve, Namrata. **Social and cultural adaptation of a fishing community on the Coast of Maharashtra.** Delhi. Dr Subhadra Channa, Reader, Department of Anthropology, University of Delhi, Delhi.

2. Sharma, Anima. **Social change among the Gonds of M P.** Delhi. Prof R S Mann, Department of Anthropology, University of Delhi, Delhi.

3. Shekhar, Chanchal. **Resource management and caste politics.** Delhi. Dr Subhadra Channa, Reader, Department of Anthropology, University of Delhi, Delhi.

Economics

1. Chaturvedi, Arvind Lochan. **Madhya Pradesh Rajya Matsya Vikas Nigam: Ek arthik vishleshan.** H S Gour. Dr Hemlata Richharia.

2. Jain, Anil Kumar. **Sagar Sambhag mein Trisem Yojana ka arthik vishleshan.** H S Gour. Prof R Mehrotra.

3. Namboodiri, Padmaja D. **Constraints on economic growth: The Kerala case.** Kerala. Dr M Kunhaman, Reader, Department of Economics, University of Kerala, Kariavattom.

4. Prasher, Hemlata. **Madhya Pradesh mein sarvajanik aye vyaya ke navin pravrittiyan: Abkari karon ke sandarbh mein.** H S Gour. Dr O P Mishra.

5. Vasudevan, S. **Utilisation of local resources and rural development.** Kerala. Dr M Kunhaman, Reader, Department of Economics, University of Kerala, Kariavattom.

Public Administration

1. Khimta, Kahan Singh. **Financial administration of industrial sector in India: A comparative study of selected public and private enterprises.** HP. Dr R D Sharma, Department of Public Administration, Himachal Pradesh University, Shimla.

Education

1. Jayasree, T K. **Effectiveness of certain models of teaching in the attainment of concepts in Mathematics.** Kerala. Dr K N Lalithamma, Prof, Department of Education, University of Kerala, Thycud.

2. Mathew, Annamma. **A study of the educational and vocational needs and problems of juvenile delinquents in Kerala and development of a guidance profile for rehabilitation.** Kerala. Dr Mercy Abraham, Prof, Department of Education, University of Kerala, Thycud.

3. Meenakumari, P M. **Assessment of student's technological skills in relation to the higher secondary and pre-degree Physics**

syllabi. Kerala. Dr K R Sivadasan, Prof, Department of Education, University of Kerala, Thycud.

Commerce

1. Krishnavani, S. **An evaluation of the job performance of middle level managers in industries in Kerala.** Kerala. Dr K P Muraliedharan, Lecturer, Department of Commerce, University of Kerala, Thiruvananthapuram.

2. Mehta, Sureshchandra Punamchand. **Study of Indian stock market function and their problems: Case study of Ahmedabad Stock Market 1982-91.** North Gujarat. Dr P C Raijiwala, Arts and Commerce College, Himatnagar.

3. Paul, Liny K. **Financial support for housing: A study in Thiruvananthapuram District.** Kerala. Dr M Sarngadharan, Reader, Department of Commerce, University of Kerala, Thiruvananthapuram.

4. Sreedharan Nair, K P. **Industrial sickness in Kerala.** Kerala. Dr M K Ramachandran Nair, Reader, Institute of Correspondence Courses, University of Kerala, Kariavattom.

Home Science

1. Tandon, Monika. **Gender based appraisal of work of farm families.** Delhi. Dr Mridula Seth, Senior Lecturer, Lady Irwin College, Sikandra Road, New Delhi.

HUMANITIES

Philosophy

1. Mathew, K J. **Conceptual unity in Advaita Vedanta and Christianity.** Kerala. Dr S Omana, Lecturer, University College, University of Kerala, Thiruvananthapuram.

2. Varghese, Santhan. **Influence of Sermon of the Mount on Mahatma Gandhi's life and thought.** Kerala. Dr S Omana, Lecturer, University College, University of Kerala, Thiruvananthapuram.

Fine Arts

Music

1. Jaya, S. **A comparative study of the influence of Carnatic music v/s-a-v/s light music.** Kerala. Dr M Hariharan, Principal, Sree Sathguru Sangeetha Vidyalayam College of Music, Thalkulam, Madurai.

Language & Literature

English

1. Ambika, S. **Characterisation in the novels of Ruth Praver Jhabvala: A study in cultural configuration.** Kerala. Dr P K Rajan, Reader, Institute of Correspondence Courses, University of Kerala, Kariavattom.

2. Vrinda, V. **Problems in the translation of poetry: A comparative study based on the English translations of Kumaran Asan and Vallathol and the Malayalam translations of Shelley and Eliot.** Kerala. Dr P K Rajan, Reader, Institute of Correspondence Courses, University of Kerala, Kariavattom.

Russian

1. Anil Kumar, S. **Satire and fantasy in the works of Mikhail Bulgakov.** Kerala. Dr K Govindan Nair, Prof, Department of Russian, University of Kerala, Thiruvananthapuram.

2. Hema Rani, R. The grammatical categories of the verbs of Russian and Malayalam: A contrastive analysis. Kerala. Dr R Gopi, Lecturer, Department of Russian, University of Kerala, Thiruvananthapuram.

Sanskrit

1. Gauswami, Dahyapuri Hathipuri. Stotra literature of Adi Shankaracharya: A critical study. North Gujarat. Dr M I Prajapati, Arts and Commerce College, Thara.

2. Geethakumari, P S. Bharatendu: A study. Kerala. Dr K Vijayan, Director, Oriental Research Institute and Manuscript Library, University of Kerala, Kariavattom.

3. Patel, Anilaben Shankarbhai. Bhavaprakas'anam of Saradatanaya: A critical study. North Gujarat. Dr M I Prajapati, Arts and Commerce College, Thara.

4. Subramonia Iyer, A. Mukti in nyayabhasya. Kerala. Dr K Vijayan, Prof, Oriental Research Institute and Manuscript Library, University of Kerala, Kariavattom.

5. Sundaresan, K K. Sanskrit Inscriptions in Kerala. Kerala. Dr K Vijayan, Prof, Oriental Research Institute and Manuscript Library, University of Kerala, Kariavattom.

Hindi

1. Anjali, M S. A study of the social philosophy depicted in the novels of Rahul Sanskritayan. Kerala. Dr N Raveendranath, Prof, Department of Hindi, University of Kerala, Kariavattom.

2. Bindumati. Amritlal Nagar ke kahaniyon mein vastu aur shilpa: Ek adhyayan. H S Gour. Dr Gobind Dwivedi.

3. Brijuria, Sandhya. Sagar ke natakkaron ke sandarbh mein Shri Padmanadh Sesang ke 6 natakon ka adhyayan. H S Gour. Dr Rajmati Diwakar.

4. Bundel, K P Singh. Ramvriksh Benipuri ka nibandhatmak sahitya: Ek anusheelan, visheshkar nibandh, rekhachitra sansmaran bhasha vritant ke sandarbh mein. H S Gour. Dr H P Singh.

5. Chandra Babu, K G. Concept of guru in Hindi Sant and Sufi poetry. Kerala. Dr N Raveendranath, Prof, Department of Hindi, University of Kerala, Kariavattom.

6. Choubey, Leena. Acharya Nand Dulare Vajpai: Chintan aur sameeksha drishtil. H S Gour. Dr Rajmati Diwakar.

7. Dube, Satish Kumar. Raghubir Sahay ka krititva: Ek anusheelan. H S Gour. Dr Gobind Dwivedi.

8. Dube, Swadiplata. Amritlal nagar ke upanyason mein chitrit samaj darshan ka vishisht adhyayan. H S Gour. Dr Suresh Acharya.

9. Jain, Archana. Jaishankar Prasad ke sahitya mein vyakti aur samaj ka dwandh: Ek anusheelan. H S Gour. Dr Virender Mohan.

10. Jain, Sashi Prabha. Nal Hindi rachnasheelta aur Vijaydev Narayan Sahi: Ek anusheelan. H S Gour. Dr Rajmati Diwakar.

11. Kadia, Rajan Manilal. A study of the Anandghanas 'Pad'. North Gujarat. Dr H G Shukla, Arts College, Patan.

12. Mishra, Akhileshchandra Gaurishanker. A study of human relation basis of social political in literature of Ramdarsh Misra. North Gujarat. Dr N N Goswami, Arts and Commerce College, Khedbrahma.

13. Mishra, Radha Raman. Acharya Bhagirath Mishra ke kavya shastriya siddhant evam sameeksha ka anusheelan. H S Gour. Dr Suresh Acharya.

14. Mishra, Vandana. Madhya Pradesh ke laghu patrikayon ka sahityik evam sanskritik anusheelan. H S Gour. Dr Usha Bhatnagar.

15. Muthal, Aruna. Hindi upanyason mein puratatvakaleen sanskriti ka swaroop. H S Gour. Dr Usha Bhatnagar.

16. Naik, Pramod Kumar. Ambika Prasad Divya: Vyaktitva evam rachna. H S Gour. Dr Virender Mohan.

17. Nema, Sandhya. Shivanl ke upanyason mein samaj sandarbhon ka adhyayan. H S Gour. Dr P Sakhe.

18. Pathak, Jaya. Sagar ke geetkaron ke parampara ke sandarbh mein Shri Vithalbhai Patel ke geet sahitya ka vishisht adhyayan. H S Gour. Dr Usha Bhatnagar.

19. Rajput, Kiran. Bundelkhand mein samasya poorti kavya parampara ka adhyayan. H S Gour. Dr Suresh Acharya.

20. Rajput, Virender Singh. Rasik sampradaya ke sandarbh mein Agradas ke sahitya ka anusheelan. H S Gour. Dr R C Mishra.

21. Sachdev, Sadhana. Ramchandra Bhargava krit Ramcharit aur Tulsi krit Ramcharit Manas ka tulnatmak anusheelan. H S Gour. Dr P Khambe, Department of Hindi, Dr Hari Singh Gour Vishwavidyalaya, Sagar.

22. Sharma, Kailash Chander. Swatantrayottar Hindi vyang sahitya ke samajik, sanskritik aur manovalgayanik pravrittiyon ka anusheelan. H S Gour. Dr Suresh Acharya.

23. Shreedas, Veena. Sagar Jile ke pramukh upanyaskaron ka sahityik yogdan. H S Gour. Dr Usha Bhatnagar.

24. Soni, Arun Kumar. Samkaleen sahitya ke sandarbh mein Lalit Shukla ke sahitya ka anusheelan. H S Gour. Dr Anand Prakash Tripathi.

25. Sushma, S. Social consciousness in the novels of Upendranath Ashk. Kerala. Dr V K Subramonian Nampoothiri, Principal, Sahityacharya Mahavidyalaya, Kerala Hindi Prachar Sabha, Thiruvananthapuram.

26. Thakur, Jagriti. Bundelkhand ke pramukh mahila sahityakaron ke sandarbh mein Smt Hiradevi Chaturvedi ke sahitya ke samajik chetna ka anusheelan. H S Gour. Dr Suresh Acharya.

27. Tiwari, Shobha. Shri Devidayal Chaturvedi Masta ke gadya sahitya mein samajik chetna ka anusheelan. H S Gour. Dr Suresh Acharya.

28. Tripathi, Indubala. Nirala ke lambi kavitayon ka sameekshatmak anusheelan. H S Gour. Dr Gobind Trivedi.

Tamil

1. Anitha Kumari, K G. A comparative study of Kalamezhuthun Pattum in Kanyakumari and Thiruvananthapuram Districts. Kerala. Dr C Subramonia Pillai, Reader, Department of Tamil, University of Kerala, Kariavattom.

2. Jayakala, K. The language study of Bharathi's patriotic songs. Kerala. Dr C Subramonia Pillai, Reader, Department of Tamil, University of Kerala, Kariavattom.

History

1. Jacob, J. Historical evolution of Anglo-Indian community in Kerala. Kerala. Dr T Jamal Mohamed, Prof, Department of History, M S M College, Kayamkulam.

2. Padamakumari, P S. Historical study of Cochlin with special reference to the Dewanship of Shanmughom Chetty. Kerala. Dr M J Koshy, Head (Retd), Department of History, University of Kerala, Kariavattom.

3. Parikh, Nareshkumar Jayantilal. A history of the rule of the Gathwads in North Gujarat from 1766 A D to 1949 A D. North Gujarat. Dr I G Oza, M N College, Visnagar.

4. Upadhyaya, Richa. Swatantrata Sangram evam rashtriya jangagan mein Shajapur Jile ka yogdan, 1901 se 1950 tak. Vikram. Dr H L Goel, Prof and Head, Department of History, Govt College, Mandsaur.

THESES OF THE MONTH

A list of doctoral degrees accepted by Indian Universities

SOCIAL SCIENCES

Library & Information Science

1. Bansal, G C. Railway library system for India: A model for Northern Railway. Panjab.
2. Rajam, V. Some personality characteristics of women librarians in Kerala. Calicut. Prof A B George, 3G, Saraswathinilayam, Trivandrum.
3. Usha Kumari, N. Design of a nutrition information system in the City of Madras. Madras.

Psychology

1. Kaushik, Avanindra Kumar. A comparative study of first generation tribal youth in urban setting with non-migrant tribal youth on some aspects of mental health and their attitude towards modernization. H S Gour. Dr Y S Vagreacha, Department of Psychology, Dr Hari Singh Gour Vishwavidyalaya, Sagar.
2. Rizvi, Irfan A. Management styles and their effect on organization performance. Delhi.
3. Sahoo, Mihir Kumar. Psychosocial factors of human helplessness. Utkal. Dr F M Sahu, Reader, Department of Psychology, Utkal University, Bhubaneswar.

Sociology

1. Bandyopadhyay, Anirban. Students and radical social change. Calcutta.
2. Rugmini, V S. Status of women and decision making in family planning. Madras.
3. Upadhyay, Radha. Sagar Nagar ke vibhinna Brahman Samudaya ke parivaron ka sanrachnatmak evam prakayatmik adhyayan. H S Gour. Dr Diwakar Sharma, Department of Sociology, Dr Hari Singh Gour Vishwavidyalaya, Sagar.
4. Usha Kumari. Brihitar Gwalior ke anusuchit jati ke parivaron per chhatravrti evam arakshna ke suvidhaon ka prabhav: Ek samajshastriya adhyayan. Jiwaji. Dr M P Shrivastava, Department of Sociology, Kamla Raja Girls Government College, Gwalior.

Social Anthropology

1. Arunkumar, Moirangtham Cha. Women's crime in Manipur. Manipur. Dr Ch Budhi Singh, Prof, Department of Anthropology, Manipur University, Imphal.
2. Bais, Vinod Singh. Bidi workers of Sagar District: A demographic study. H S Gour. Dr A N Sharma, Department of Anthropology, Dr Hari Singh Gour Vishwavidyalaya, Sagar.
3. Chakrabarti, Syamaprasad. Life in a Sundarban Village: A study in interaction scene. Calcutta.
4. Pawadi, Halagi Shanta. Factions in the political parties of Karnataka. Karnatak. Dr N K Kaderotad, Reader, Department of Anthropology, Karnatak University, Dharwad.
5. Yasmin. An anthropological profile of Kotla Tribe. Andhra.

Social Work

1. Anantharaman, Zareena. Effects of institutionalization on disabled children. Bangalore. Dr R Parthasarathy, Department of Psychiatric Social Work, National Institute of Mental Health and Neuro-Sciences, Bangalore.

2. Narayana, Kethineni Veera. Regional variations in health status: An exploration into the relative role of health services and socio-economic development in India. JNU. Dr Imrana Qadeer, Centre of Social Medicine and Community Health, Jawaharlal Nehru University, New Delhi.

3. Quraishi, Shahabuddin Yagoob. A study of the role of communication social marketing in women and child development programmes in Northern and Western India. Jamia. Prof M Z Khan, Prof, Department of Social Work, Jamia Millia Islamia, New Delhi.

4. Sandhya. A socio-economic and psychiatric study of widowed women. Kurukshetra.

Political Science

1. Abdisalam Mohamed. U S Policy towards radical regimes in Africa in 1970s: Case studies of Angola, Ethiopia and Somalia. JNU. Prof B K Srivastava, Centre for American and West European Studies, Jawaharlal Nehru University, New Delhi.

2. Dutta, Santanu. Development of regional identities: A study of North East India with special reference to Assam, 1921-1947. Gauhati. Dr (Mrs) K Medhi, Reader, Department of Political Science, Gauhati University, Guwahati.

3. Kashikar, Mohan Shrikrishna. South Asian Association for Regional Co-operation (SAARC): Its genesis, development and prospects. Nagpur. Dr G M Kulkarni, Rajtanik 490, Hanuman Nagar, Nagpur.

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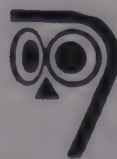
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IN THIS ISSUE

Education : Vital Yet Neglected	5
Cost of Higher Education	11
The Idea of the University	13
Need for Differential Financing of Nascent Universities	17

Convocation

Gujarat University, Ahmedabad	20
----------------------------------	----

Campus News

Discipline & Work Ethics	23
Kalinga Prize	23
Genetic Engineering and Tissue Culture	24
Refresher Course in English	25
IUCAA Research Scholars	25
Peace March for Communal Harmony	26

Agriculture

Balanced Use of Fertilizers	26
National Integration Camp	27

News from UGC

Countrywide Classroom Programme	27
------------------------------------	----

Book Review	29
Theses of the Month	33
Additions to AIU Library	38
Education News Index	39
Classified Advertisements	55

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Our Hosts



PONDICHERRY UNIVERSITY

Profile of Activities and Achievements

The Genesis

The Pondicherry University, named after the city and the capital of a former French enclave known for its learning and wisdom, is designed to revive and strengthen the cultural glory of this Territory and the nation. Setting out the broad scope of this University, former Prime Minister late Shri Rajiv Gandhi remarked: "Shaped by its unique history, Pondicherry, as an erstwhile French colony has made its own invaluable contribution to the ethos of our nation. The new University of Pondicherry will give full opportunity to this culture to bloom and open new vistas of scientific attainment of the people of the Union Territory". It was with this lofty aspiration, the Pondicherry University, a teaching-cum-affiliating University, was established by an Act of Parliament on 16th October, 1985.

Campus

Pondicherry, the capital city of the Union Territory of Pondicherry, looks like a tiny spot on India's sprawling eastern coast (Lat. 13.4 '4' N and Long. 80.14 '5' E; Area: 492 sq. kms., Population about 6 lakhs). The city bears the signs of a composite culture. The important landmarks in and around Pondicherry are: the Romain Rolland library founded in 1892, having over 6,000 rare French books; the Pondicherry museum attached to it is preserving the first century finds of Arikkamedu; Sri Aurobindo Ashram, a principal centre for intellectual and spiritual activities; the French Institute of Indology, a centre for studies in Indian Languages and Culture; the Jawaharlal Nehru Institute of Postgraduate Medical Education and Research, popularly known as JIPMER; Lyc'ee French, having the same curricula as adopted in France, and Auroville, the city of dawn dedicated to the ideal of human unity, created with the funds and soils of Europe, USA, Canada, Japan, Tibet and many other countries besides *Bharat*. Pondicherry is about 160 kms. south of Madras and is connected by road, rail and air.

The University campus itself is situated on the precinct of Pillaichavadi, Chinna Kalapet and Periya Kalapet villages of Pondicherry Union Territory at a distance of 11 kms. from Pondicherry town on the Pondicherry-Marakkanam road. The site covers an area of about 780 acres running north-south along the road. This is a magnificent sea-side area gently sloping towards the sea on the east, with a spectacular grand canyon-like ravine running east-west, through its heart as it were.

National Character

With its national character, the jurisdiction of this University extends to Pondicherry, Karaikal, Mahe, Yanam, Andaman and Nicobar Islands, and Lakshadweep. This territory is a microcosm of India, with people speaking many languages—Tamil, Telugu, Malayalam, Bengali, and Hindi. The students and faculty are drawn from all over the country. Another unique feature is that this is the first central university established by the Government of India while the New Policy on Education was being formulated in 1985 and hence it is destined to set a new pattern and develop as a model in the sphere of higher education in India. Therefore, the hallmarks of the New Policy, namely, relevance, quality and access to weaker sections have formed the broad objectives of this young University.

Overview of Development

The University is just seven years old. This fleeting passage of time has witnessed innovations in the life of the University. The University has established Directorates – Directorate of Physical Education, Sports and Students' Welfare and Directorate of Culture and Cultural Relations; Six Schools of Excellence – School of Management, Salim Ali School of Ecology, School of International Studies, Sri Aurobindo School of Eastern and Western Thought, Sri Sankaradoss Swami School of Performing Arts, and Subramania Bharathi School of Tamil Language and Literature; 14 Departments—Department of Tamil in Karaikal, English, French, Sanskrit, History, Economics (one also in Mahe), Commerce, Physical Education and Sports, Mathematics, Physics, Chemistry, Life Sciences, and Computer Sciences; and Nine Centres – Centre for Future Studies, Centre for Women Studies, Academic Staff College, Centre for Adult and Continuing Education, English Language Teaching Centre, Archival Cell, College Development Council, History Museum, and Centre for Tourism Studies.

Presently the University offers Doctoral and M.Phil Programme in 17 disciplines, PG Programmes in 18 areas, PG Diploma in three subjects, Two programmes in Certificate courses. The distinguishing features of these courses are non-traditional, useful and relevant. Some of the innovative courses are: Functional Mathematics, Business Finance, Developmental Economics, Comparative Literature, Life Sciences, etc. The development of science & technology education has been accorded a place of pride in the University. The University has on its roll 120 distinguished men and women as

faculty and admitted nearly 700 students among whom 300 are women.

Establishment of a new Department of Computer Sciences and the introduction of a new programme, Master in Tourism Administration (M.T.A) in the School of Management are the salient academic accomplishments of this year. The two year M.T.A. Programme, the first of its kind in the region, has been sponsored by the Ministry of Tourism and Civil Aviation.

As an affiliating University, we have in our fold 18 institutions – medicine, dental, engineering and law, one of each, two teacher training, two research institutes and ten science and humanities colleges offering more than 40 courses to 7,000 students. Among the various institutions affiliated to it, mention may be made to JIPMER – one of the best medical institutions in South Asia, Vector Control Research Centre, Pondicherry En-

gineering College and the Centre for Postgraduate Studies of the Government of Pondicherry. One of the tangible contributions of the University has been the unification of the various curricula and syllabi taught in these institutions prior to their affiliation to Pondicherry University.

The College Development Council of this University established in July, 1990, has rendered valuable academic guidance for proper planning and integrated development of affiliated colleges, with a view to update the knowledge of college teachers,

the University has organised periodic orientation and refresher courses through its Academic Staff College set up in October 1987. During 1987-92 this institution had organised 21 orientation courses and seven refresher courses benefiting 802 teachers. The University also has a number of proposals to enhance the academic standards in the affiliated institutions. Among them mention may be made of the efforts to restructure the existing undergraduate programmes, introduction of five year integrated master's and bachelor's courses, provision of permanent affiliation to the institutions and help them to reach 2F status, encourage the institutions to gain autonomous status for introducing new educational programmes on their own, and to develop audio video centres for effective teaching.

The remarkable achievement of the University in its early years, can be seen in the development of the University Campus and the other infrastructural facilities, despite financial constraints. The construction of Administrative Complex, Central Library Building,



named after the famous diarist of Pondicherry Sri Ananda Rangapillai; Academic Complex; Estate Office; School of Management Building; two Hostels for men students; twenty six Staff Quarters; three Storage Sheds; and Engineering Office bear ample testimony to the physical achievements recorded by the University.

Campus development has received continued thrust. The Sports Complex, named after Thiruvalluvar, with 5000 capacity stadium, 400 mt. cinder track, covered plinth area of 797 sq. mts. and uncovered plinth area of 796 sq. mts. has been completed at a cost of Rs. 60.93 lakhs. Today, this sprawling complex has the facility for organising national meets in sports, particularly in football, hockey and athletics.

The developmental efforts of the campus include the construction of 7 kms. compound wall, laying 1.28 km. length of road, and provision of 1 km length street light. During the period under review, the University has procured equipments worth Rs. 50 lakhs, acquired 63,773 volumes of books and subscribed to 534 journals.

So far the University had organised 10 regional, 24 current social, economic and scientific conferences/seminars of relevance. The faculty members have published several books and more than 250 research articles in reputed journals and have obtained 42 major and minor research projects from various national and international agencies. The faculty members have been invited by several foreign countries to deliver lectures and to participate in conferences and seminars. Our students have been receiving fellowships from UGC, National Board of Higher Mathematics, Indian Council of Historical Research, Council of Scientific and Industrial Research, Government of Tamil Nadu and Government of Pondicherry. The University has received 14 endowments from philanthropists and instituted 57 gold medals for top rankers.

National and International Collaboration

We have made fruitful efforts to forge links with several foreign universities. The University has received considerable financial and physical assistance from the Population Council (USA), Japanese Government, International Women's Organisation (France), and the Ford Foundation. National institutions like, the Indian Institute of Geo-Magnetism, Bombay, National Board of Higher Mathematics, and the Anthropological Sur-

vey of India have come forward to establish their centres on our campus. The Department of Mathematics and the Department of French have established foreign collaborations under which there had been frequent exchange of scholars between France and the Pondicherry University. We have also received assistance in the form of books and other materials. Recently, the University has signed memorandum of understanding with the University Pierre et Marie Curie, Paris for institutional collaborations in science and medicine. In the month of September, 1991 Sankaradoss Swami School of Performing Arts collaborated with Pavilion of the Tibetan of the Tibetan Culture to present 'Cham' dance in Pondicherry.

About 1,11,700 tree saplings were planted in the campus through the Horticulture Wing under horticulture development programme. In addition to that 1200 saplings were planted by the members of the "Tree Lovers Society".



The development in the area of dissemination of information by establishing a Distributed Information Sub-centre for Biotechnology under the auspices of the Department of Biotechnology, Government of India at a cost of about 6 lakhs. This centre will cater to the growing needs of information for Biotechnologists working in the region.

A proposal for an establishment of a convention centre which would attract several national and international agencies to have

their academic deliberations and this would also function as a training ground for our MBA and 7 MTA students is being actively considered by the University with assistance from the Government of Pondicherry and the Ministry of Tourism, Government of India.

VIII Plan Proposals

In the formative five years which also coincided with the VII five year plan period, the University from the ground level has reached the state of take off. This transition was remarkable indeed. The process of furthering the infrastructural facilities has started during the VIII plan period. This plan period would therefore be equally crucial for us in the direction of consolidation of fruits of yester years as well as in our effort to diversify.

During this plan period four new departments are being established in the areas of Biotechnology, Earth

Sciences, Sociology and Hindi. Efforts in a small way have been made during this year towards multi-disciplinary activities, deformatisation of curricula and teaching structure, and improving the quality and quantity of academic staff.

Academic Innovations

We have initiated two broad measures in the area of academic innovations with rational objective of optimising output with minimal inputs. Firstly, five year integrated master's degree programme for plus two level students, a Five Year integrated bachelor's degree for SSLC level students and two year associate degree courses have been introduced. These courses, we hope, would help the outstanding students from the schools to reach a fair degree of excellence in their avocations. The second measure relates to the Cafeteria Approach in our teaching and curricula structure so that the students would have the freedom to choose a course according to their desire and preference and also the teachers to design their courses independently. The Pondicherry University in its efforts to innovate has brought forth a plan of the Indian experience and Western wisdom in conferring the choice based credit system. The most important aspect of this system is that it enables the students to tailor the course according to their felt needs. Each student in fact constructs his own curriculum as a child uses building blocks with the help of the wise-council from faculty advisors. This again would help to produce men of right type, avoid wastage in education, promote quality and efficiency and maximise employment. In other words, these two innovations taken together would help the University to achieve the adumbrated objectives of higher education, namely, quality, relevance and faster development of the society.

Salient Features of *Choice-Based Credit System* are :

- * All teaching programmes will be in the form of credit courses.
- * Students can construct their own curriculum in consultation with Faculty Advisors.
- * Part of the credit requirements can be had from Indira Gandhi National Open University.
- * Can accrue credits and complete the degree requirements at a pace that suits the student.

- * New interdisciplinary combinations will be available.
- * Bright students can complete the P.G. degree in less than two years.

Administration

The role of an efficient administration for the successful organisation of academic activities needs hardly any emphasis. In fact, administrative efficiency and academic excellence should go hand in hand. Therefore, efforts have been made to streamline the administrative procedures and attempts are being made to evolve healthy recruitment and promotion policies so as to pave the entry of talented persons in the ladders of administration. We are envisaging two broad changes in the existing administrative hierarchy of the University. Functional autonomy with accountability and responsibility is given at lower level and thereby process of decision making has been decentralised. The second measure relates to our efforts to computerise administrative functions so that all the technological inputs are made available for effective decision making. With these innovations, we hope that the administration would cater to the increasing needs of the academic community in the University.



The progress registered by the University in its formative years is no doubt impressive by all reckoning. But this will not lull us into complacency because the University is conscious of the fact that it has travelled only a short distance in its journey and it has many more milestones to cross. The University is confident that it will march forward undaunted and undogged by the constraints towards its firm goals. The fast changing society, national development and education imperatives may create more challenges and cast onerous responsibilities upon the University. The University hopes to emerge from these challenges and move from strength to strength by striving to act as an instrument of socio-economic change of this nation. It is also hoped that with the dedicated men and women and with their collective wisdom and foresight, Pondicherry University, like the land of Pondicherry would become a beacon light in the area of higher education.

Education : Vital, Yet Neglected

K. K. Balachander*

It was in late 'fifties that economic thought brought into focus the *investment* aspect of education. The idea of education as an important factor responsible for generating and accelerating development owes its origin to a series of researches conducted during late 'fifties and early 'sixties by economists like Theodore Schultz, Edward Denison, Gary Becker, Jacob Mincer, Mark Blaug, John Vazey, amongst others. Much of the economic progress of advanced countries, that were among the backward and the poorest a few decades ago, they pointed out, was the outcome of the development of their human resources especially through education. They also argued that the developing countries, particularly, should regard most of their outlay on education as an 'investment', and not as 'consumer outlays', since economic development must be more important for them now than the advanced countries.

Like economists, sociologists too maintained that education, particularly higher education, brings about a change in the individual, promoting greater productivity, modern attitudes, values and beliefs about work, and quality of life. The political scientists, in their turn, observed that education encourages individuals to take active interest in public affairs and perform their duties, and exercise their rights as members of the community. It prepares young people for citizenship, and is an important means for the creation of an open society and political democracy. In the absence of education, the very functioning of democratic institution becomes a mockery – in fact people become tools for exploitation by political demagogues.

The 'externalities', or 'social benefits', of education are so pervasive that the list could be extended further. Education, in short, has many direct and indirect effects of a permanent and far-reaching nature on the society. It is difficult to measure all these societal benefits because they are quantitatively elusive. But the measurable benefits themselves, are sufficient to demonstrate sizeable financial rates of return to investment in education.

By mid-'sixties, there was a general agreement among social scientists, politicians and planners that education is a key change agent, or catalyst, for moving countries along the development continuum. Basically, it is an activity which contributes to the enrichment/enhancement of human resources. Provision of education to all has now come to be accepted as a

collective responsibility of the community. It cannot then be expected to function satisfactorily in the absence of some public action. *Since education is treated as a societal issue, it has to be planned in the context of societal background. Decisions about education provision cannot be left to private individuals, groups or enterprise, or to the market.* Besides, investment in education these days has become quite large or lumpy, and is characterised by long gestation period than many other types of investment. In this context, only the Government can take a long-term view, and come forward with the much needed funds.

During the last four decades, there has been a worldwide explosion in educational enrolments. As Surendra Patel (1985) commented: "It is difficult to imagine any comparable period in the world history when education was so rapid, the numbers involved so overwhelming". And there have been constant efforts at integrating education with the process of socio-economic transformation. The devising of regular public financing mechanism for the development of education also received considerable attention among policy makers.

The Indian Experience – Waning Optimism?

Even before Independence, Indian leaders and people had realised that in the transformation of the Indian economy in particular, and the society in general, education would have to play a predominant role. With freedom, fresh vistas were opened for developing human potential and expertise, which could be used in a progressive realisation of economic goals and social objectives. Education rode on a wave of optimism in India immediately after Independence. India's First Five Year Plan, launched in 1951, acknowledged education as the catalytic factor which led to human resources development. The subsequent plans also had emphasised education as being the focal point of development.

However, a feeling now persists that the earlier government enthusiasm for education has diminished over the years. Far too much emphasis is being placed on industrial investment and development and far too little on education and human investment. This is misleading because even rapid industrialisation can be realised only if it has the *complementary* support of education. It is the emphasis on education in developed countries as a catalyst towards economic growth that has made them what they are today.

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Despite the hymns sung in praise of education in every plan Document, this vital sector has been given a low priority, and relegated to the backstage as a 'Welfare' activity by all Finance Ministers. *It has yet to be recognised as an integral part of the development process and funded accordingly.* Indian financial authorities, hemmed in by increasing demand for funds from other sectors, or whenever the government budget goes awry, have taken recourse to pruning allocation for education. This implies that the Government still regards education as an activity deserving only 'residual' or 'left-over' funds. Such short-term objectives of financial policy have proved to be detrimental to the long-term development of education. It has led to postponement or halfhearted implementation, and sometimes even total abandonment of education programmes to which the centre and the states are already committed.

Education is stated to be an "investment in the present and the future" in the National Policy on Education (1986), but this, in no way, is reflected in plan allocations. The percentage share of the education sector in total five year plan allocation has consistently declined over successive plans. The First Plan saw 7.5 percent of the total outlay going to education. But in the Seventh Plan outlay, the relative share of education was almost the lowest – 3.9 percent, while the amount actually spent came up to only 3.6 percent. It has dipped to less than half of what it was in the First Plan i.e. from 7.5 to 3.6 percent. As Tilak (1982) rightly put it, no scientific criterion has been adhered to in the country while allocating resources for education in the plans.

Though the expenditure on education as a percentage of the GNP has increased from 1.3 in 1950-51 to about 3.8 in recent years, public resources devoted to education continue to be far below what seemed to be required, given the low educational status of much of India's population. Also it still compares unfavourably with the corresponding position in many developed, and even some developing countries (6-8 percent of the GNP). India is also far behind the target laid down by the Kothari Commission, i.e. 6 percent of the GNP, which should have been achieved by 1985-86. The NPE (1986) and later the Acharya Ramamurti Committee (1992) also had stated that from the Eighth Plan onwards, the outlay on education should uniformly exceed 6 percent of the national income. All these bodies had realised that educational reconstruction would be possible only if adequate resources are provided. However, if the present trend continues, it would not be possible to maintain even the 3.8 percent level.

The goal of 'literacy for all' – the key requisite for economic and social advancement – still remains an inaccessible mirage. More than 50 percent of India's population continues to remain educationally back-

ward; every second Indian is an illiterate. The fulfilment of the constitutional directive of providing free and compulsory elementary education up to the age of 14 – which is the key requisite for economic advancement and social/political restructuring of society – still remains a pipe dream. We are already 33 years behind the time stipulated in the constitution, i.e. 1960, on achieving this aim! There is a big gap between the promise and the actual practice *revealing a clear case of betrayal of people belonging to the lower socio-economic strata, majority of whom still continue to remain outside the formal education system.* The most crucial segment of the population from the point of view of the 'quality' of life of future generation is women, but they are the worst affected by the scourge of illiteracy. Among 34 countries in the low-income group, the literacy rate in India is just 42 percent as against 58 percent for the group. No wonder the country finds itself so much behind the advanced countries despite an abundance of human resources!

Had the government paid sufficient attention during the last four decades to education, and channelled more resources to this vital sector, considerable progress would have been made in all sectors of the economy, and the contribution of education to development would have been really high. Looking at the experience of many other countries, it can be confidently concluded that literacy, by itself, would have contributed a great deal to alleviation of poverty, a more equal distribution of income, and an improved social environment, thus providing the necessary impetus to human resources development. A literacy level of 70 percent is considered as a necessary condition for rapid economic development. Even China can now boast of a literacy rate of 75 percent as against India's 52 percent – in fact, the former's success in recent years is no less due to its high literacy level.

Surprisingly, although India is far behind many other nations in providing elementary education, it can hold its own with regard to the stock of graduates! If the present trend continues, India will be facing by the turn of the century, *the paradoxical situation of having perhaps the largest concentration of graduates as well as illiterate population!* As Amartya Sen (1982) put it: "In this nation with a nuclear capacity, well-developed scientific knowhow, and a higher education ratio eight times that of China, nearly two-thirds of the citizens simply cannot read or write".

The process of faster expansion of higher education over the years has been at the expense of quality and efficiency – quality is being traded off for quantitative expansion by spreading scarce financial (and academic) resources thinly over a larger number of students and institutions. We are perhaps now approaching a situation of diminishing returns from higher education. This

is sad especially at a time when international competitive forces, particularly in advanced knowledge and skill-oriented activities, are in full swing. India has already lost much ground to competitors. In future, fiercer competition and new technologies will demand refinement of knowledge and skills. It is not abundant natural resources and cheap unskilled labour, but knowledge, which is growing exponentially, that is rapidly becoming the key factor of production and a source of comparative advantage. Information and intellectual capital have become increasingly important parts of the production process. As this process evolves, there will be less dependence on physical capital and more on advanced skills and knowhow. The situation calls for more public investment in education and qualitative upgradation of especially higher education. Many developing countries in Asia have realised this and have beefed up their technical training at higher levels.

History will record that the greatest mistake of the Indian Republic in the first forty two years of its existence was to make far less investment in education. The cumulative deleterious consequences of this neglect have now begun to manifest themselves. All attempts to rejuvenate the system have floundered at the implementation stage *due to budget-constraints and competing demands from other sectors as also lack of political support (or lobbying) which has become an absolutely vital condition for success of any strong programme in India.*

The problems of forty or more years ago are precisely those which confront us even today, and the solution for them have remained on paper until the present day. Now the Eighth Five Year Plan (1992-97) document has, as the earlier plans did, emphasised the crucial role of education in human resources development. However, looking at the past experience, there is a likelihood of education again being put on the back-burner.

As stated earlier, increasingly the world is going to be divided into fast-moving economies that use knowledge effectively, and slow-moving economies that do not. If the gap between developed countries and India is not to widen further, India must invest more in education. *If it does not spend the required money, it is going to lose out permanently in the development race.*

Reforms with a 'Human Face'?

India is now set on important changes in economic thinking and policy-making. And there is a lurking fear that the new economic policies of the Government of India – known as Structural Adjustment and Stabilization Policies – may have further serious adverse effects on the development of education in general, and on its financing, in particular. The 1992-93 Budget of the Government of India already saw a cut in the allocation for education. The Finance Minister's promises of an 'adjustment with a human face' makes little sense in the

face of education getting a lower priority. This is clearly evident in his remark: "Once the fiscal imbalances are controlled, priorities of public spending will focus more sharply on poverty alleviation programmes and social sectors, particularly health and education." Earlier, he had assured in the Lok Sabha that these sectors would be given a better deal in the next budget, i.e. 1993-94, by which time he expected the financial constraints to ease. How far his assurance would materialise is anybody's guess!

The policy makers in India appear to be more concerned with short-term financial adjustments, and not long-term goals like eradication of poverty and in strengthening the human dimension of development. In the process of India becoming an 'adjusting' economy, the burden of sacrifice is being transferred to those least equipped to bear it – the poor and the vulnerable. It is argued that the 'bitterness of the medicine' administered would be short-lived and that in the longer run there would be definite improvement with respect to human development, especially education, health and nutrition. In the long-term, faster economic growth may perhaps help education – there is however no guarantee about it – but since education itself is a long-term activity, once it gets derailed, due to paucity of funds, it may be difficult to put it back on rails in a short time when funds become available. (Tilak, 1992).

Let us now come to the implications of adjustment policies for education in other countries which have adopted the structural adjustment programmes under the aegis of the World Bank, the IMF and other donor organisations. In majority of them, especially in Latin America and Africa, there have been severe cuts in public spending on social sectors; in fact, the adverse impact is found to be heavier on education than on other sectors. (Reimers 1991, Tilak 1992 and Sanyal 1992). The reduction in public spending on education has led to a decline in access to education (thus contributing to declining enrolments), especially in the case of girls and weaker sections of the population. The rates of drop-outs have increased, and this has made universalization of elementary education more difficult. It has also led to a deterioration in the quality of education especially at higher levels. On the whole, the adjustment policy is associated with declines in almost all the indicators of educational development. *Given the international experience, the prospects for education in India appear bleak, if not dismal, unless some safety nets are designed, or deliberate policies are pursued, to protect the system.*

We must also take into account another implication of the economic adjustment programme, and this is rather serious. There is an increasing talk now of creating a 'market environment' or adopting a 'non-interventionist' development policy. With this paradigm shift in economic policy from the 'command' economy to the 'market'

economy, public subsidies for especially higher education may further shrink, and there will be pressures for increased cost recovery in higher education from the beneficiaries. Also there will be pressures to hand over a larger part of the expanding higher education system to market forces, or to privatise it with all its ill-effects. Commercialisation of higher education might go on at a frantic pace. In fact many state governments and private bodies/trusts feel that this is the right time to sell the argument in favour of privatisation of higher education, especially the professional/technical categories. They further argue that such a measure will (a) cut down the draft on the scarce resources of the Government, especially when these resources are needed for priority areas like elementary education, adult literacy and vocational courses, and (b) relieve the enrolment pressure on regular government and government-aided colleges. Privatisation may be a solution to the ills of other sectors of the Indian economy, but certainly the time is not yet opportune for taking such a step in the field of higher education considering the undesirable way in which majority of the existing private (unaided) colleges are functioning in states like Maharashtra, Karnataka and Andhra Pradesh. State support for higher education cannot be entirely dispensed with. Because of the existence of 'externalities' or social benefits – even though they might defy exact monetary computation – higher education *merits* some intervention by the Government.

To Conclude

The Government of India must definitely pursue a course of structural reform and strive for promoting efficiency all round. But in the process let it not be insensitive to the economically, socially and educationally underprivileged. The policymakers must take up in right earnest measures for the development of human resources, a major aspect of which is education. This will surely motivate the poor to play their due part in development. *It is necessary to set in motion a process wherein 'economic reform' and 'educational reform' will go side-by-side, each reinforcing the other.* The situation in India's educational front is no less alarming than that on the economic front. *Concentrating exclusively on economic reform would not only be tantamount to abandoning the Prime Minister's and the Finance Minister's promise of 'reforms with a human face' but may even defeat the reform objectives themselves.* The adjustment policies should explicitly take into account the education sector, and treat it as an investment activity that raises productivity. In fact, even the World Bank is now veering round to this view. Instead of the 'market alone' approach, the Bank is now talking about a 'market-friendly' approach to development. 'Market-friendly' approach, according to the Bank, means (a) Government needs to do *more*, or intervene effectively, in those areas where markets prove inadequate and cannot be

relied upon, and (b) Government needs to do less, or there should be less Government intervention, in those areas where markets have a role to play and could operate reasonably well. This would mean that not all aspects of our society can be left to the market. It cannot, for example, be relied upon to provide people, especially the poor, with adequate education, health and nutrition, and access to family planning, and in these areas the *government needs to do more, and do it better.* Improvements in the living standards in many (now rich) countries have often been the direct result of government intervention in the domains of education, health and food. Gone are the days when many Western economists/experts advocated a policy of least intervention in social services like education and health. The recent victory of Bill Clinton in the U.S. presidential election could be attributed largely to the promises he made to provide better education and health services and more jobs. Perhaps, the Indian policy makers may like to take a fresh look at the process of structural adjustment and see whether some mid-course corrections are needed.

Education is an essential pre-requisite for national development, especially in developing countries like India. We should look at education as a societal issue, and the government should intervene, and interact, in this sphere far more constructively and positively than it is doing at present. A new thrust to education should form the central part of the development agenda. The nation has already paid a heavy price for its continuing neglect of a sector which is vital for its progress.

There cannot be a more trenchant summing up of the views expressed in this article than in the words of the distinguished economist John Kenneth Galbraith (1992) :

"Once it was understood that an educated populace is the first requirement for economic progress. That essential fact was forgotten (in many ex-colonial lands); impressive steel mills, great hydroelectric dams, glistening airports, were too often sited amid ignorant people. I have previously made the point: in this world there is no literate population that is poor, no illiterate population that is other than poor.... If we are to talk effectively about economic development now and in the years to come, the emphasis must be on political stability, on human investment and on sound, sensible agricultural policy. These, we now know, are the prime requirements of progress."

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JUST OUT BOOK ON CHILD LABOUR

Children at Work: Problems and Policy Options

Edited By:

Bhagwan Pd. Singh • Shukla Mahanty

1993, xii, 274, Tables, Figs. Demy 8 Vo.

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R.L. Kothari
REGISTRAR

COST OF HIGHER EDUCATION

C. R. Mitra*

- * Computing costs of higher education is beset with problems as this has to be done by collecting, analysing and computing empirical data.
- * Empirical data is bound to hide managerial inefficiencies/deficiencies which again will affect evolving precise norms/costs.
- * Any such analysis would depend on
 - nature of university
 - size of university
 - faculty/discipline for which cost is being computed
 - methodology adopted, etc.

Characteristics of higher education

- * It is knowledge intensive
- * Specialisations abound
- * Knowledge explosion impacts pervasively all disciplines needing an ever increasing amount of both physical and human resources inputs.
- * Technological inputs, very much needed in both science and technology disciplines, are expensive and need constant updating due to a fast rate of obsolescence.
- * Higher education institutions have come to be cost intensive both in terms of capital expenditure and maintenance.

Economic status of student population in India's education system and some implications

- * 80 percent of university and high school completers were from the top 20 percent of society (NCERT Survey, 1971).
- * Ten years later a UGC study showed that 70 percent of university completers were from the top 20 percent of income earners.
- * 70 percent government revenue comes from indirect taxation which is paid by the rich and the poor alike. The quantum contributed by the poor in the subsidy that goes into higher education system is more than that contributed by the rich since around 60% of the population are living in poverty or just above it.
- * This means that the poor are subsidising education of the rich and is certainly untenable in terms of equity.

Costs of running university system

- * The plan outlay of higher education in relation to the total outlay for education was 9% in the first five year plan, 25% in the fourth five year plan and in the seventh plan the expenditure was of the order of 14%.

* *Former President, Association of Indian Universities and Director, Birla Institute of Technology and Science, Pilani (Rajasthan).*

- * Statistics available from the National Institute of Educational Planning and Administration (NIEPA) indicate that total expenditure on education at all levels has shown a fifty fold increase between 1951 and 1984. (From Rs. 114 Crore to Rs. 6,000 Crore).
- * The share of central and state governments to financing higher education has increased to 80 percent from 57.1 percent between 1950 and 1980.
- * At the same time the level of fee contribution has decreased from 20.4 percent to 12 percent.
- * In spite of a 100 percent increase in examination fees announced last year by Delhi University, the fee payable is still lower as compared to the minimum payable for Class XII Examination of CBSE.
- * The recurring expenditure of a university ranged from Rs. 36.1 Lakhs (Vidyasagar University, W.B.) to Rs. 4105.7 Lakhs (BHU) in 1988-89 (AIU study titled 'Financial Deficits in Universities' 1991). The average expenditure per annum is likely to be of the order of about Rs. 5 Crores in a multifaculty, medium sized university.
- * Enrolment in universities increased by 8.5% in 60's and 70's and is projected to stabilise at 5% upto the turn of the century. This means increasing subsidy by government every year, even without counting the impact of inflation. Can the country's priorities afford this escalating subsidy to higher education? Current economic alignments in society need to be recognised and used in working out constitutional mandates.
- * An AIU study showed that during the period 1984-85 to 1988-89 out of the 80 universities for which data was available, 45 universities had deficits, of which 10 universities had a deficit of over 10 percent of their recurring expenditure.

Scenario of self financing

- * There are meritorious students who are also willing to pay a higher fee. Opportunity for access to education of their choice should not be denied to them because of policies of government like reservations or limited seats available. That will be against the grain of HRD.
- * Excellent examples of privately sponsored self financing institutions providing quality education are available even in India.
- * Access-equity balance has to be left to be evolved and suitable mechanisms have to be devised for the purpose. There seems to be no *a priori* formula available especially in the context of the severe financial crunch faced by universities.

It would appear, therefore, that to allow private initiatives in education and allow them to run on a self financing basis would in the long run not only prove equitable but also beneficial to all. Fee should be based on economics of operation, charged from those who are willing to pay.



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The Idea of the University

Contemporary Perceptions in the U.S. and India

H. Francis Soundararaj*

The perception of higher education has undergone a dramatic change in the 2nd half of the 20th century in both the East and the West. The change, for better or for worse, has brought about disillusionment all over. At a seminar held in the U.S. on "The Idea of the University" reported in *Partisan Review*¹ (2, 1991) the distinguished participants – professors of Sociology in the universities of Boston, Harvard and Rutgers – complain of "a sense of disorientation and loss of purpose that permeates almost every aspect of the life of the academy". The repeated references to the ineffectiveness of the "outmoded" system of higher education in India which, at least in humanities and social sciences, is considered irrelevant, echo this worldwide dissatisfaction with university education.

The reasons may be traced back to the cataclysmic turn the global civilisation has taken with the historic events of the Renaissance, the Industrial Revolution and the French Revolution. Whereas the Enlightenment released into Europe the quest for knowledge for its own sake with the accompanying liberal tendency to free learning from its esoteric fetters and to democratize, but not politicize it, the other two historical movements unleashed the opposite tendency of materialism, ushering in the outbreak of modern technology, and of a narrower interpretation of democracy as the freedom to bolster individual or group wishes at the expense of collective good and freedom. (Indeed democracy was born from a clash of sectional or class interests!). This gave rise to the conflict between the classical pursuit of knowledge for its own sake and the modern pursuit of knowledge that subserves careerism and other pursuits not wholly academic. The results were long in coming but they have surfaced in university campuses during the last forty years.

Brigitte Berger, Professor of Sociology at Boston University convincingly articulates this conflict as it prevails in the U.S. She attributes this conflict to the rapid expansion of higher education in the late fifties and sixties of this century which led to the conversion of "the sheltered space" of the seekers of knowledge into "open universities" which became "research machines of awesome dimension" bringing in the wake a scramble for degrees-for-jobs, an "expressive revolution" such as "Marxist liberationisms"

and "misunderstood freudianism", and the creation of faculty uncritically conscious of tenure and material prospects to the detriment of academic quality. The force of it all became evident, she says, in a massive assault on the traditional classical liberalism i.e. pursuit of knowledge by means of a rigorous rational inquiry. Brigitte finds fault with the modern epistemologies of knowledge which, according to her, are partisan and politically motivated – all serving sectional interests eschewing the royal road of reason. These are products of a counter culture that seeks to destroy traditional values that are Timeless. Although the primary concerns of the academy – such as poverty, inequality, ecology, feminism, third world, racism and discriminations are valid social concerns, she believes that "the exploration of any of these subjects must be conducted in *rational analytical* terms and must stand the muster of empirical reality testing. Not to do so would be a debasement of academic principles and knowledge would be turned into mere ideology, opinions and sentiments." For this reason she rightly finds the western feminist movement flawed because it is the fad of women of the upper middle class as it is not related to the real interests of ordinary women, the reality of the concern for their children and husbands, for instance, has been excluded from the modern concept of feminism. The rapid expansion of higher education and the proliferation of ideologies which are not strictly academic created a schism, says Brigitte, between *transmission* and *advancement* of knowledge and fractured the integrated goal and structure of the university that was in vogue forty years ago. Critics of Brigitte at the seminar justifiably averred the inevitability of the 'credentializing' function of the university which it cannot escape but they do not effectively detract from the soundness and validity of her thesis that if the university has no other but the credentializing function "then ... we have abdicated our important educational and also civilizational mission". That which is at issue in the west is therefore "the self understanding of the university, and beyond that, the legitimacy of the western academic tradition and the cultural values upon which it rests."

In a developing country like India the issues are far more basic though not entirely dissimilar. In a sense there is an attempt at the self-understanding of the system of higher education that prevails today but it overarches concerns that are primarily social and economic. That is how it often is in a developing country.

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The western elitist liberal tradition that was adopted without question determined the nature and purpose of education in India. Strangely enough the liberal tradition did not achieve in India what it achieved in western countries. The pursuit of knowledge with the rigour of rational enquiry led to finest creations in art and literature in the west and evolved the objective scientific inquiry which freely explored all avenues of human knowledge with rational rigour. Such goals were not either taken seriously by our British rulers or they were unrealizable in the system of education that was followed. The highest goal that was set before our brilliant young minds was the Civil Services Examination – not the imaginative excursion into art and science. Neither did the university voice its concern about its goal and direction. The purpose of the liberal tradition was thus foreclosed. Indian educationists did not make a serious attempt to either modify or transform the educational system that was left behind. A return to oriental systems and learning would be anachronistic in a situation where all countries hang together with a global civilisation based on the global market, governed by a global value system, whatever that may be. Isolation is suicidal.

Post Independence Scenario

After Independence the attention of the politicians was not so much on educational as on economic reconstruction. Even the latter was not consciously attempted in consultation with the Academy. The system of education was primarily that of the ossified 19th century London model. Nevertheless the content of the undergraduate curriculum fluctuated according to the needs of economic development. Economics, then Chemistry and Physics and now Business and Commerce were in the ascendant in that chronological order. Any reform was fortuitous except with reference to value education and vocationalisation of courses which were superadded to the already unchanged curriculum. A predominantly public school tradition continued to benefit the upper middle class and high income groups. Education, in other words remained the privilege of the few and did not have set goals suited to the aspirations of the people of India.

A phenomenal expansion of education took place between 1947 and the present. The number of universities (and university level institutions) and colleges has increased from 17 and 636 respectively to more than 200 and 7000 between 1947-48 and the present. Enrolment in the same period increased from 2,40,000 to 40,00,000 and it is growing at about 7% per annum. There are nearly 2.5 lakh teachers. India has now the third largest higher educational network in the world. Enrolment in Indian higher education accounts for about 43% of the total enrolment in the developing countries. Every 8th student enrolled in higher education on the globe is an Indian.²

This expansion brought several constraints and problems. Foremost is the inability of the university system to respond to the change which are the concomitants of expansion. The rigid administrative structures and the non-resource generating but financially dependent systems could neither usher in academic change ensuring quality nor provide the minimum infrastructure for the educational machinery. The affiliating system continues and the old guards are not willing to preside over the liquidation of the system which is a heavy liability on the nation's resources although it has become non-functional.

The second problem is the promotion of self-financing institutions which unfortunately look upon education as a profit making industry and which are purveyors of the demand for job-oriented education whether it is business administration or medicine or engineering. Even the social science curricula were geared to feed the job-creating industry. The purpose of the university is by and large understood as one of 'credentializing' and not the classical academic pursuit of knowledge for its own sake. What is worse, the spending of the rate payers' money on such costly education does not benefit them because the products are sold in markets the world over except in our own country. The so called brain drain is the resultant problem. The third problem is the social injustice suffered by the masses who cannot afford to have the benefits of higher education at all.

In this connection the financing of higher education in India tells a sordid tale. After independence the state funded the development of education by means of taxation.³ The policy of the government included: (a) granting of fee concession to socially and economically weaker sections; (b) offering of full financial support to scheduled castes and scheduled tribes; (c) granting of income tax exemptions to philanthropists who funded education; and (d) freezing by legislation the rate of fees charged from students. As regards (a) this is the major source of educational financing in India and accounts for 86% of the total expenditure. Inasmuch as the poor and the middle class are among the regular payers of direct and indirect taxes we are in an absurd situation in which the poor pay for the education of the rich. The next source of funding is the income from student fees which accounts for only 10% of the total funding. Raising of fees has complex implications and may not be done easily. The monolithic university system recalcitrant to change and the pattern of financing higher education exclude a majority of youth in the villages who can never see the precincts of a university or college. Urban upper middle class alone can enjoy the privilege. Dr. S.M. Israney supports a three tier fee structure in order to rationalize the funding pattern. Those who can pay should be charged higher fees; those who cannot pay today but will be able to pay later should be given

loans; and those who are not able to pay should be given "freeships" subject to proving their academic worth.

The two recent Supreme Court decisions⁴ seem to help. One is the banning of the capitation fee in self-financing institutions of higher learning and the other is the ruling on the Mandal Commission Report that reservation of jobs for scheduled castes and scheduled tribes shall be done only on the basis of economic criterion. The former may not be conducive to the growth of quality education as it precludes investment in higher education and the latter has problems of implementation. Nevertheless these egalitarian measures may help in the long run.

From the foregoing account it may be perceived that the Indian educational system is similar to that of the west in that the problems are common to both in one sense; the rapid expansion of the education industry and democratisation of education has made the credentializing function of the university inevitable. Dependence on public funding has not only curbed academic freedom but it also directs the course of the future developments on campuses which may not be academically sound. The materialism that has resulted owing to the professionalizing and vocationalizing of courses has created a professoriate that is tenure conscious rather than academically enthusiastic. In all this melee the original and only true purpose of education, namely, the academic rigour of rational analysis and empirical verification is at stake.

In India the University Grants Commission's experiment of creating autonomous colleges seems to be beneficial in many respects. The freedom to make curricula that suits local needs, the designing and administering of courses of study and assessing the performance of one's own students – these academic facilities are quite welcome. However this cannot go far unless these colleges can offer their own degrees and make their own courses of study according to the policy and pursuit of individual institutions. So long as these colleges are under the surveillance of the university while making academic reforms and in the grip of the financial control by the state, academic freedom cannot go very far. Autonomous colleges will then defeat the very purpose for which they became autonomous, viz. exercise of academic freedom to transform education for social benefit and academic growth.

What seems to be plausible is to think of a new system of education altogether that can surmount most of the ills described in the foregoing account.

A New Model

The undergraduate (U.G.) and graduate programmes may helpfully be delinked. The courses at the U.G.

level may be so restructured as to provide for the credentializing function of the university without sacrificing an indepth enquiry in the discipline chosen by the student for core studies. Materialism may be somewhat offset by integrating components of social analysis and value education made obligatory for all the undergraduates. The three tier model of Foundation Courses, Core Courses and Diversified Courses (the latter meant to expose students to different academic approaches to knowledge in humanities as well as sciences) may serve the need. The graduate programme may be strictly modelled along the tradition of the rigour of classical enquiry. To surmount the disadvantages of overspecialisation and the consequent alienation of disciplines, the concept of the "multiversity" may be helpfully tried. Several disciplines may be accommodated on the same campus – ranging from agriculture to sports – and so integrated as to provide for maximum interdisciplinarity across related disciplines within a school and further unified by required components such as study of religions, value systems, current debates on social issues, etc. so that a professional may speak intelligently about AIDS and women's concerns while he specialises in his particular discipline making his inquiry as rationally objective as possible. The financing of such a system may be based on an egalitarian principle following something like the three tier pricing of higher education suggested above.

It is interesting to note that our civilisation has become globally so cohesive that our problems are similar. Education serves the same needs of humanity across the nations.

There is no reason why national barriers should preclude global cooperation and arrangements to share our common woe and work together to determine our common destiny without discounting the enrichment that may come from the particular experience of a nation. An international body like the U.N. may profitably be involved in this concern. Till then what the modern civilisation has unified across nations will not cohere to bring the fruits of education to all. Neither can education rescue its tottering bulwark of free objective rational enquiry.

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CONTENTS

PART ONE

MANAGING INDIA'S ECONOMY THE SHORT-TERM AND THE LONG-TERM

- | | | |
|-----|---|-------------------------|
| 1. | Globalisation of the Economy | Malcolm S. Adiseshiah |
| 2. | On Some Issues in Globalisation | K.S. Krishanswamy |
| 3. | The Indian Economic Scene. Retrospect and Prospect | S.R. Sen |
| 4. | Structural Adjustment in India | Ranjit K. Sau |
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| 13. | Employment and Retrenchment. A Problem of Law and Economics | Z.M.S. Siddiqi |
| 14. | Relevance of Social Action under the New Economic Policy | M.L. Dantwala |
| 15. | Discrimination in the Indian Labour Market | G.C. Gasper |
| 16. | Consumerism and Inflation | B.P. Pandey |
| 17. | Globalization and Indian Business | S.L. Rao |
| 18. | Structural Change and Market Efficiency | Erik Lundberg |

PART TWO

OTHER CONTRIBUTIONS

- | | | |
|-----|---|-----------------------------|
| 19. | NGOs and Earth Summit. Some Unfinished Tasks | S.P. Ahuja |
| 20. | Economic Development and Environment | Baidyanath Misra |
| 21. | Understanding Indian Society | Rajeshwar Prasad |
| 22. | Social Welfare for the Community and the Problem of its Relation with Individual Rights | K.D. Gangrade |
| 23. | A Time to Search Within. Towards a National Dialogue | Tarlok Singh |
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Contribution to Science
Contribution to Education and Public Service | Jagjit Singh
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Need for Differential Financing of Nascent Universities

Pondicherry University : A Case Study

V. Natarajan*

D. Rajagopalan**

Introduction

Terry Sanford said "The economic growth through quality education is not just a catch phrase – It is a fact of life". "Though Education at all levels contributes to national development, higher education in particular, assumes significance in accelerating national development by developing social capabilities among people in terms of higher knowledge and skills and generating new knowledge necessary for development and self reliance".¹

If the universities are to generate new knowledge, apart from general infrastructural facilities, excellent reference books and journals and adequate equipment are essential. In the context of soaring prices of books and equipment, huge investments are necessary to fully equip a university. "We are also conscious of the fact that higher education and research require substantial investments and that in the modern context, improvement and maintenance of the highest standards of teaching and research demand very substantial inputs".² Taking this vital fact into consideration "the commission has given great emphasis on infrastructural development in the university system i.e. provision for academic buildings, staff quarters, student hostels, equipments, books and journals and such other facilities designed to promote the quality and level of teaching and research as well as to foster corporate life on the Campus".³

"The resource crunch affects different universities differently. Not all universities are alike, we can categorise the universities in India as follows :

Central Universities/State Universities

Affluent Universities/Not so affluent Universities

Old Universities/Not so old Universities/New Universities

Large Universities/Medium Universities/Small Universities

Technical Universities/Non-Technical Universities

Broadly, I would like to say there are developed universities, developing universities and under-

developed universities in India. You would admit that needs of each category of universities are different; generalisation, therefore is difficult".⁴

While elucidating the issue, the Chairman, UGC at the National Convention of Association of University Administrators adduced the analogy of an infant, youth and the old man by comparing universities at different stages. The infants require special care and nutritious food. So also a new university, in the nascent stage requires special attention and additional inputs. This hypothesis is tested by analysing the expenditure and investment pattern of Pondicherry University taking it as a case study.

Development Expenditure

Pondicherry University was commissioned by an Act of Parliament (Act 53 of 1985) on 16th October 1985. It was the first year of seventh plan period. Since it was established in the middle of 1985, it had $4\frac{1}{2}$ years of 5 year plan period for its developmental activities. The following table indicates the development expenditure incurred upto 31.3.1990 during 7th plan period.

Table 1
Pondicherry University
7th Plan Development Expenditure upto 31.3.1990

Sl. No.	Detail	Revenue	Rs. in lakhs	
			Capital	Total Expenditure
1.	Science & Humanities	637.59	738.34	1375.93
2.	Engineering and Technology	27.10	140.57	167.67
3.	Total	664.69	878.91	1543.60
4.	Percent	43.07	56.93	100.00

Source : Pondicherry University – the First Five Years, May 1989.

It is seen that 43.07 percent was spent on revenue items for maintenance of the University and only 56.93 percent was spent on capital items. Thus only about 57 percent was available to build up its assets – buildings, books and equipment. Since it was the first plan period, no separate fund under Part - I – Maintenance was available. The University has to develop its assets from

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a scratch. Since the funds were shared between revenue and capital expenditure, full justice could not be done to both.

Growth of Assets

The distribution of capital funds to various heads of assets, as well as their growth over years are shown in the following table. Since the University was established in the middle of 1985-86, that year is left out in growth trend analysis.

Table 2
Pondicherry University
Growth and Distribution of Assets 1986-87 to 1990-91

Rs. in lakhs						
Sl.No.	Details	1986-87	87-88	88-89	89-90	90-91
1.	Buildings	123.22 (61.76)	479.22 (67.37)	675.60 (69.10)	873.57 (95.40)	895.23 (70.90)
2.	Plant & Equipment	13.19 (6.61)	41.22 (5.80)	65.74 (6.73)	84.51 (7.30)	90.82 (7.19)
3.	Vehicles	7.80 (3.91)	10.97 (1.54)	12.09 (1.24)	14.53 (1.25)	16.96 (1.34)
4.	Furniture	16.53 (8.29)	33.27 (14.68)	45.80 (4.69)	52.02 (4.49)	63.76 (5.05)
5.	Books and Journals	18.56 (9.31)	44.13 (6.20)	61.56 (6.30)	69.13 (5.97)	99.01 (7.84)
6.	Total fixed Assets	179.30 (89.88)	608.81 (85.59)	860.79 (88.12)	1093.76 (94.41)	1165.78 (92.32)
7.	Other assets	20.17 (10.12)	102.49 (14.41)	116.18 (11.88)	64.78 (5.59)	97.02 (7.68)
8.	Total	199.47 (100)	711.30 (100)	976.97 (100)	1158.54 (100)	1262.80 (100)

Note : Figures in brackets are percentages to the total.

Source : Computed from Annual Accounts of PU.

The percentage of investment on equipment was 7.19 and on books 7.84 in 1990-91. This clearly evidences the fact that there was need to provide more share to equipment and books though it would be impossible to invest funds to make the total percentage or less equal to the percentages of well established universities because of the difference in 'age' or 'period of accumulation' of different universities. For example Pondicherry University was established in 1985 whereas Hyderabad University was established in 1974, eleven years ahead of Pondicherry University. Further, the difference will also be due to other factors like number of departments, students, teachers and other correlates. The percentage of investment on books and equipment could increase only when special additional grants are provided in the initial stages.

Accelerated Growth Trend

In new universities, since they have to build up fixed assets from a scratch, the growth trend is at an ac-

celerated pace. This could be revealed by the growth indices and average growth rates over the years. In the following table the growth indices for 1990-91, taking the level at 1986-87 as base, are shown for both Pondicherry University and Hyderabad University.

Table 3
Growth indices of Fixes Assets 1990-91 (base 86-87)
Pondicherry University (PU) & Hyderabad
University (HU)

Sl.No.	Assets	Index for 1990-91 (Average growth rate over 1986-87)			
		PU	HU	PU	HU
1.	Buildings	727	155	156.8	13.8
2.	Equipment	689	203	147.3	25.8
3.	Vehicles	214	236	28.5	34.0
4.	Furniture	386	215	71.5	28.5
5.	Books	534	181	108.5	20.3
6.	All Assets	633	176	133.3	19.0

Source : Annual Accounts of Pondicherry University and Hyderabad University

It clearly shows that the growth of Pondicherry University was accelerating at a faster rate. But still paradoxically, as revealed by the common size statement of assets and ratio analysis, percentage composition of investments on equipment & books were far below in the case of Pondicherry University showing the need for more inputs.

Ratio Analysis

A further analysis of ratios throws some more light on this fact. The ratios of Pondicherry University (PU) and Hyderabad University (HU) for 1990-91 are compared here.

Sl. No.	Ratio	Pondicherry University	Hyderabad University
(1)	<u>Fixed Assets</u> Total Assets	.92	.86
(2)	<u>Buildings</u> Fixed Assets	.77	.39
(3)	<u>Plant & Equipment</u> Fixed Assets	.08	.33
(4)	<u>Vehicles</u> Fixed Assets	.02	.02
(5)	<u>Furniture</u> Fixed Assets	.05	.06
(6)	<u>Books & Periodicals</u> Fixed Assets	.08	.20
(7)	<u>Plant & Equipment</u> Buildings	.10	.87
(8)	<u>Books & Periodicals</u> Buildings	.10	.87

Ratios 3,6,7 & 8 indicate, PU should invest more on equipment and books and periodicals.

Per Capita Investments

Further analysis of per student, per teacher and per employee investments in 1990-91 corroborates the fact that there is need to invest more on equipment and books in Pondicherry University.

Sl. No.	Per Capita Investment	Pondicherry University Equip. Books		Hyderabad University Equip. Books	
1.	Per student (Rs. in '000)	12.06	13.15	60.61	36.39
2.	Per teacher (Rs. in '000)	78.97	86.10	511.05	306.84
3.	Per employee (Rs. in '000)	6.68	7.28	35.78	21.48

Despite the fact that PU had accelerated growth rate, the per capita investments are far less than those of HU, indicating the need for more funds.

Average Value of Investment

The average value of investments on assets at current prices is another index of comparison. It eliminates, to a certain extent, the effects of the time variable caused by the 'age' of the universities.

	(Rs. in lakhs)	
	PU	HU
Average accumulation p.a.		
Average Fixed Assets Value	233.16	194.59
Average Buildings Value	179.05	75.27
Average Equipment Value	18.16	65.16
Average Vehicles Value	3.39	3.50
Average Furniture Value	12.75	11.53
Average Books Value	19.80	39.12

The average values of equipment & books for Pondicherry University are also far less than those of Hyderabad University.

Fund Flow Analysis

Net Working Capital

By evolving a special method of finding out the Net Working Capital, (NWC), the NWC's were worked out. (NWC = Non-fixed Assets - Non-fixed Liabilities). The fact that the nascent universities have difficulty in finances, is shown by the level of NWC

Year	Rs. in lakhs			
	NWC		Current Ratio	
	PU	HU	PU	HU
1988-89	77.22	106.64	3.03	1.38
1989-90	18.10	117.21	0.78	1.26
1990-91	42.90	97.98	0.67	1.25

In the final year of VII Plan, 1989-90, the NWC reached a negative level and it continued further in 1990-91 in respect of PU.

Funds Flow

This revealed that funds were applied on fixed assets by utilising Net Working Capital in addition to capital grants provided by UGC and others, by Pondicherry University. Between 1988-89 and 1989-90, the amount of NWC utilised was Rs. 95.32 lakhs and between 1989-90 and 1990-91 it was Rs. 61.00 lakhs.

Foundation Fund

Andhra University and Osmania University were provided with Foundation Funds. For Andhra University State Govt. contribution was Rs. 27 lakhs and for Osmania Rs. 3 crores.⁵

This seems to resemble the permanent endowments suggested by the Gnanam Committee report of UGC "Towards New Educational Management."⁶

A Development Committee was constituted with eminent Vice-Chancellors and a UGC representative to study various aspects of development in Pondicherry University in 1991 and the VC, PU has stated in the working paper prepared for the meeting: "we may deliberate on the various projects and programmes to generate resources by the University itself besides exploring the possibility of seeking foundation grant as one time support to establish the University with basic infrastructure."⁷ The Committee agreed.

Conclusion

Thus there is a need to provide additional inputs to new universities to develop their infrastructure. In the case of equipment, there is no use providing funds in a piece-meal manner, because certain sophisticated equipments cost Rs. 30 to 40 lakhs. The funds for books should also be provided as lumpsum in the beginning to meet huge investment needs and then periodical grants may be required to augment the holdings.

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Research in the Universities

"Rightly we have liberalised our economy but corresponding changes have to be made to strengthen our Science and Technology. If India is to compete favourably with other countries in this area of market oriented economy, industries and Govt. need to pay more attention to research. What is being done at the moment to support research in the universities is woefully inadequate and if sufficient attention is not paid in time, the nation will pay a heavy price", said Prof. G. Ram Reddy, Chairman, University Grants Commission while delivering the Convocation Address at the 41st convocation of the Gujarat University, Ahmedabad. Excerpts

The two traditional functions of a university are research and teaching. To this, another function, extension, has been added in recent years. While we should emphasise these three functions more or less on a regular basis, we need to look at the social and economic environment in the country. As you are aware, there have been radical changes in the economic policy of the country. Economic liberalisation is being introduced not only in India but all over the world including the former socialist countries. Even China, which officially proclaims socialism, is going in a big way in the direction of market economy which they call Socialist Market Economy. It is a new term coined to cope with the changing domestic as well as international economic situation. Very recently I visited China as a member of the delegation headed by the Minister for Human Resource Development, Shri Arjun Singh. This visit exposed us to some of the startling changes taking place in that country.

Writing in the *Economist*, Jim Rohwer says :

China's economic performance in the 14 years since 1978 has brought about one of the biggest improvements in human welfare anywhere at any time. Real GNP has grown by an average of almost 9% a year. By 1994 China's economy is almost sure to be four times bigger than it was in 1978; if China hits its target,

which is reasonable, by 2002 the economy will be eight times bigger than it was in 1978. At that point China will have matched the performance of Japan, Taiwan and South Korea during their fastest quarter-century of economic growth. To suit the new climate the Chinese Universities are required to promote the four modernisations emphasised by the government. As a result, the universities are changing their policies in a big way. Among other things, now the emphasis is on high quality research and enterprises to generate their own resources. The national objectives are clear and the universities are required to fall in line.

India is a federal country with parliamentary democracy where each state enjoys certain amount of autonomy. Universities also have their own autonomy in this country. The type of clear-cut directives which the Chinese Universities receive are not given to the universities in India. However, national policies are fairly well known and it is in the interest of the country that our universities take note of these policies.

Let me now invite your attention to one important function of the universities all over the world i.e., research with particular reference to India. The ideal end of the university, as T.F. Tout defined it many years ago, "is to make the life of learning and science possible, in

an institution whose greatest function is the advancement of learning and whose rank in the academic hierarchy ultimately depends upon the contributions made by its members, to the sum of human knowledge and the enlargement of the range of human thought"².

Transformations have been taking place in the society and when innovation primed by technology pervades every sector of human activity, balance between research and teaching has been changing, writes Ruberti.³ In the changed context, the objective of research is no longer the expansion of knowledge, but production of results useful for new products and new processes. Therefore, resources assigned to research depend more and more on the consciousness that they are an essential component of investment in the development of a production system and the percentage of the gross domestic product assigned to research has become an important index for its qualification.

It is said that the success of high technology companies is based on four factors (the four M's: Money, Manpower, Markets and Motivation). Manpower refers to the role of education in the development of high technology industries. It needs to be emphasised that the trained manpower is the central characteristic of high technology industries. We observe that the countries which want to progress concentrate on development of high technology which means strengthening of R&D in the country. As mentioned earlier, our economy has opened up which means there will be competition from outside the country. The industries in the country will have to compete with international forces. To do this, we need to build our research strengths. The quality of research has to improve and become relevant to the society. As CNR Rao observes in an article: "National commitment and doggedness in becoming competitive are more important. Competitiveness as well as improvement in the overall quality of work will come about only when there is a sound domestic policy based on international strengths of which science and technology constitute an important com-

ponent.⁴ Recognising the importance of research the Draft Programme of Action (POA) - 1992 says : "The university system should move to the centre stage. It should utilise its autonomy for innovations and teaching and pursuing high quality research". It is well known to the university community that during the last more than three decades, the University Grants Commission has tried to strengthen teaching as well as research in the universities. I shall not refer to all the programmes undertaken by the University Grants Commission but three programmes are very significant. (1) Special Assistance Programmes, (2) Assistance for Major and Minor Research Projects, and (3) Setting up of Inter University Centres for providing common facilities for research in Nuclear Science, Astronomy and Astrophysics, Atomic-energy, etc.

With a view to promoting research in the country, the government has set up a large number of national laboratories dealing with a variety of areas in Science and Technology (S & T). Similar institutions

have been set up in Social Sciences and Management Studies. An investment of about 5000 crores has been made in R & D during the 7th Five Year Plan. But the investment in R & D in the university sector is very small compared to national laboratories. For example, only Rs. 75 crores have been provided in the UGC budget for a five year period to support centres of excellence in science.⁶

When we look at the developments in Science and Technology in the more advanced countries, we find that the support for it in India is very weak. The POA asserts : "The gap between India and other advanced countries has significantly widened in terms of Scientific and Technological capabilities. There is, therefore, a greater urgency for promoting Science and Technology, both for internal development and international competitiveness".⁷

While there is a need to further strengthen R & D in the country we notice a serious gap in the infrastructural facilities and capabilities be-

tween what obtained in specialised agencies, national laboratories, in the industrial undertakings on the one hand and in the university system on the other hand.⁸ This should not be allowed to continue for long. If research in the universities is weakened, the whole fabric of development in the country would suffer. After all, university supplies the manpower needed by the industry and the laboratories. There is, as the National Policy on Education, 1986 points out, a symbiotic relationship between higher education and research. But support available for R & D in the university for programmes like COSIST, DSA and CAS is far from satisfactory.

In the changed context, industries in India and their products have to be competitive in the international field. This needs strong research support and high quality research, particularly in the universities. Referring to the American situation Clerk Kerr has said: "Today education is inextricably involved in the quality of a nation's



From L to R : Prof. G. Ram Reddy, Chairman, UGC, who delivered the convocation address , Dr M.N. Desai, VC, Gujarat University and Shri M.S. Shah, Registrar.

education. And the university, in particular, has become in America, and in other nations as well, a prime instrument of national purpose".⁹

Let us look at the position of R & D in India from an international perspective. One of the most commonly used indicators for international comparison of S & T efforts is the proportion of Gross National Product (GNP) devoted to research and development activities.¹⁰

The expenditure on R & D as a percentage of GNP for the whole world in 1990 was 2.55%. For the developed countries this percentage has gone up from 2.22% in 1980 to 2.62% in 1985 and further to 2.9% in 1990, whereas in the case of developing countries the percentages of these three years were 0.52%, 0.54% and 0.64% respectively. Most of the developed countries spend between 2 to 3% of their GNP on R & D. For instance, in France it is 2.3%, Japan 2.8%, U.K. 2.3%, USA 2.6%, and Israel 3.7%. On the other hand, in the developing countries it has been much less – in Egypt it is 0.2%, Venezuela 0.3%, Cuba 0.9%, Pakistan 1.0% and in India it is 0.9%.

When we look at the figures from the point of view of the per capita Gross National Product, the developed countries like USA spend \$514.70, Sweden \$577.57, Japan \$558.80, UK \$226.83, Canada \$216.06, France \$364.13. In the developing countries it is much less – in Egypt it is \$1.29, Indonesia \$0.88, Pakistan \$0.91 and in India it is \$2.76. India has 4.50 Scientists, Engineers and Technicians (SAT) per thousand of population as compared to 184.18 in Canada and 111.14 in Japan.¹¹

Thus, it is clear that the national support for S&T is not at all satisfactory. We must realise that industrial production and technical¹² capability are not synonymous with each other. Operating 'screw driver technologies', as we have done in many cases does not take a nation very far. Bulk of the industrial production in the civilian sector has been on the basis of imported know-how, which has come in the form of packaged hardwired and unabsorbed black boxes. The large base of our industry owes its size to our

large markets and it can take little credit for opening up new markets through new products. For example – we are among the largest producers of bicycles, fans and sewing machines in the world and yet we have seen no improvement in any of these. We are the largest producers of sugar in the world, but our technology has remained old and outdated.¹³ Further, Dr. Mashelkar argues: "Although the economy has opened up, it will be several years before the real results of this opening up will be visible. Our industry, so much used to non-competitive environment, cannot be suddenly expected to make massive investment in R & D. The government will thus continue to play the crucial role in supporting and promoting R&D in the coming decade."¹⁴

Referring specifically to support for engineering science research one would have hoped that the Indian engineering industry would strongly support this. The real picture of such support from the leaders of Indian engineering industry makes dismal reading.¹⁵

During the last four and half decades efforts have been made to create a modest infrastructure for S & T but it is woefully inadequate to make India and its industry competitive in the world market. Emphasising the need for the strong support of S&T, Dr. C.N.R. Rao says: "The language of science and technology is needed today for survival. It has become a cultural need. Even poorest of the poor and the smallest of the small countries need this language if only to decide on the options for development and policy for import".¹⁶ A period of benign indifference, argues Dr. Rao, will cause an irreparable damage to the fragile structure of Indian Science and Technology.¹⁷

I have quoted extensively from the official documents and the writings of our distinguished scientists to indicate the nature and kind of support for research in India. Rightly we have liberalised our economy but corresponding changes have to be made to strengthen our S & T. If India is to compete favourably with other countries in this era of market oriented economy, Industries and Govt. need to pay more attention to research. What is being done at the

moment to support research in the universities is woefully inadequate and if sufficient attention is not paid in time, the nation will pay a heavy price. We would be made to depend on others, and India would become an attractive market for goods produced by others. This would smack of new type of colonial status. Looking at the present alarming situation of funding, the scientific community is greatly worried. I hope the government, as well as the industry, would take note of this alarming situation and take corrective steps. We cannot build a strong nation on weak foundations.

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Discipline & Work Ethics

Mr. P.K. Seth, Director (Administration) of the University Grants Commission, recently inaugurated the 10-day training programme on 'Organisational Discipline & Work Ethics', organised by the Training Centre for Non-Teaching Staff of Universities in India at Kakatiya University.

Explaining the growth and development of higher education in India during the last 45 years, Mr. Seth said that a stage had come for the universities and colleges to mobilise resources instead of heavily depending upon the UGC and the Government for financial assistance. This could be done by offering consultancy services and working in collaboration with the industries, Mr. Seth felt.

Dr. K. Jayashankar, Vice-Chancellor of Kakatiya University, who presided, said that functioning of universities, like several other organisations, had become more and more individual oriented rather than system based. In most of the organisations, either viable systems did not exist or even if they existed, they were frequently meddled with. Consequently the efficiency of an organisation was becoming more and more dependent upon the efficiency of the individual who headed that organisation, the Vice-Chancellor said.

Emphasising the need for ensuring proper work ethics in any organisation, Dr. Jayashankar felt that no code of professional ethics would give the desired results unless it was voluntarily imposed upon by the staff themselves.

Comparing the models obtaining in the democratic societies like the United States of America, the regimented societies like the

erstwhile Soviet Union and India, Dr. Jayashankar observed that in the Western model, individual freedom and voluntarily self-imposed discipline co-existed perfectly. Existence of a viable system and self-imposed discipline were the essential pre-requisites for the successful working of any organisation, he concluded.

Delivering the valedictory address Prof. J. Satyanarayana of Commerce Department, Osmania University, called upon the supervisory personnel working in the universities and other organisations to be objective in their dealings and not to allow their narrow personal considerations to ride over the interests of the institutions. He said that honest and hardworking employees would certainly get their due in the long run and advised them to plan for the future of the institution.

Prof. A. Shankaraiah, Registrar, who presided, said that supervisory personnel could not afford to be authoritarian in their attitude in the face of growing activities of the service associations and unions in all organisations including universities. The training of this type would help them to get work done by their subordinates by proper motivation, the Registrar felt. He said that the trade unions had come to stay in any organisation to look after the welfare of the employees and added that these unions should also contribute to improve the work ethics of the staff.

23 participants drawn from the supervisory category (Assistant Registrars and Superintendents) representing 13 universities and research organisations all over the country attended the course. The resource persons included Registrars of the

universities, senior faculty members of the Administrative Staff College of India, academic administrators from conventional institutions and professional organisations.

Kalinga Prize Presented

In 1921, on receiving the Nobel Prize for Physics, Albert Einstein had said, "science will take man either to glory or to the grave," and had gone on to add that if all the people of the world knew about the beauty and beast in science, they would then bask in the glory of science. Recalling the words of Einstein and referring to the "decrease in the number of students opting for science," Dr. Peter Okebukola of Nigeria, recipient of the Kalinga Prize for the popularisation of science, wondered whether "we are communicating science well enough or is it that people are just not listening".

Dr. Okebukola, Professor in the Department of Curriculum Studies, Faculty of Education, Lagos State University, was awarded the 1992 Kalinga Prize along with Dr. Jorge Flores Valdes, Director, Universidad Nacional Autonoma de Mexico, by the Union Deputy Minister for Education and Culture, Ms. Selja in New Delhi recently.

The prize, instituted in 1951, is presented each year by the United Nations Educational, Scientific and Cultural Organisation (UNESCO) to a person or persons with a distinguished career of service in the interpretation of science and research to the public.

Both the 1992 recipients were recognised for their efforts in explaining the myriad differences of science to the masses. Each has evolved his own way of taking science into everybody's life. Dr. Valdes' endeavours can be divided into three distinct categories. These include the construction of the Museum of Sciences (Museo de las Ciencias), of which he is at present

the Director, organisation of science lectures as well as publishing and editing scientific materials meant for the general public.

According to Dr. Valdes, though initially interested in research, he switched over to popularising science in 1982. Since then, he has been in charge of a programme, "Domingos en la Ciencia" of the Academia de la Investigación Científica. As many as 1,1114 sessions have been held between 1982 and 1991. Of these, 95 were on astronomy, 175 on biology, 388 on physics and the rest focussed the much-needed attention on medicine, chemistry, geophysics, mathematics and engineering.

Since 1989, he has been in charge of organising 'Research Coloquia'. An active public speaker, he has delivered 39 lectures for the general public besides those at technical seminars. Apart from 63 research papers in physics which have received 800 citations in scientific literature, Dr. Valdes has written 64 papers and 10 books (in Spanish) devoted to the teaching and popularisation of science.

Despite all this, Dr. Valdes felt that "there are still miles to go." According to him, Mexico did not have adequate number of scientists. Keeping its size, population and world economic status in mind, he said the country should have 10 times the number of scientists it has at present.

Dr. Okebukola is the first person from the African continent to have bagged the award, which turned 50 on that day. A professional science teacher, he has been in the frontline of science education efforts in Nigeria since 1974 and has prepared teachers at all levels. Besides conducting educational programmes on the electronic media, the radio-man, as he is popularly known, has organised several other programmes, including inter-school science debates and contests, set up science clubs and

presented 'career talks in science and technology.

According to the radio-man, all his endeavours till date were just part of his crusade of "selling science as hard as I can." While stating that the Government did not render adequate support to such efforts, he said most programmes aimed at popularising science were primarily sponsored by the private sector.

The awards were given away during the inaugural session of the Sub-Regional Meeting of National Commissions for Cooperation with UNESCO of South and Central Asia. UNESCO awarded the first Kalinga Prize in 1952. It was established at the initiative of Mr. Biju Patnaik, Founder and Chairman of the Kalinga Foundation Trust in Orissa. The Prize comprises a cash award of 1,000 pounds sterling granted by the Trust. Besides a gold medal, the winner is also invited to visit India as a guest of the Trust.

The Union Minister for Human Resource Development, Mr. Arjun Singh, whose inaugural speech was read out, highlighted the importance of education, and said solutions to the escalating problems of population growth, urban migration, environment and the whole gamut of developmental activities were critically dependent on access to appropriate knowledge and on the transfer and sharing of such technology.

There was a growing awareness of the crucial importance of development of human resources along with the creation of industrial and technological infrastructure to speed up development and enhance international competitiveness, he said. And in such a scenario, human development has been accorded priority in the national and global agendas.

Though humanity is surrounded by many injustices, the injustice arising out of the inequitable access and acquisition of knowledge can be rec-

tified, said Ms. Selja. Referring to the oft-stated comment that the "future of mankind lies in the hands of the younger generation," she said the onus of ensuring the right inputs to these impressionable minds laid on the present generation.

Genetic Engineering and Tissue Culture

Professor D. Boulter, Department of Biological Sciences, University of Durham, U.K recently visited the Department of Botany, Kurukshetra University, and delivered a Lecture entitled 'Genetic Engineering of Enhanced Insect Resistance and improved Protein Composition in crop plants', under the extension lecture programme. Prof Boulter enlightened the students and faculty member regarding the use of advanced techniques of genetic engineering and tissue culture aimed at crop improvement. He particularly highlighted the achievements of the Durham group in connection with improved insect resistance and nutritional quality of storage proteins.

Insects are responsible for approximately one third of the total losses of annual agricultural production. The first cloned gene, the Bt gene, for insect resistance used by scientists in United States was from a bacterium. And the scientists of Durham have been using plant proteins for the solution of plant problems. The trypsin inhibitor from cowpeas which has been intensively studied in his lab has been used to provide resistance against a wide spectrum of lepidopteran insects. The cowpea trypsin inhibitor, (CPTI) gene, isolated from resistant genotypes, has been used in *Agrobacterium* mediated transformations. This gene, through plant transformation techniques, stands great promise towards delivering insects resistant lines efficiently and quickly. Similarly other proteins like soybean trypsin inhibitor amylase inhibitors and lectins are also being used for this purpose.

The Pea globulin sub-fractions are known to differ in their amino acid

composition. The vicilin polypeptides, though present in reasonably high proportion, are very poor sulphur containing amino acids. Screening for lines with comparatively higher legumin ratio is the important strategy towards improving nutritional quality of pea proteins. However, the new techniques of genetic engineering allow replacement of insignificant codon by the codons specifying sulphur containing amino acids to in the vicilin polypeptides. The cloned genes thus mutated by site-directed mutagenesis can be used for plant transformations and improvement of the crop. According to him though the new techniques are fast and efficient and effect charges without disrupting the whole genome, still these can simply complement and not replace the conventional methods of crop improvement.

Refresher Course in English

The Academic Staff College of Pondicherry University recently conducted the Refresher Course in English which was attended by 38 participants drawn from different parts of India.

Dr. A. Gnanam, the Vice-Chancellor of Pondicherry University in his valedictory address stressed the need for Refresher Courses in the fast changing world of ours. He wanted the English teachers to move away from using Literature as a means of imparting linguistic skill. The British summer courses in English for those from the continent have no literature content-like Shakespeare and Milton. There is the need for linguistic skill. What is learnt is to be communicated. Otherwise, it has no use. So learning a language well become important. Moreover, when students' skill is deficient, it is attributed as a reason for failures in other content subjects. Hence on the teachers of English rests the success of education.

Dr. M.S. Jayaraj, Director of ASC, said that English continued to have a place in the multi-lingual society of ours. He wanted the

English teachers to encourage creative writing among the students and the staging of English plays by them.

Dr. P. Marudanayagam, Head and Prof. of English, Pondicherry University and Course Coordinator in his brief report said that Literature had not lost its relevance or appeals but continued to provide spiritual sustenance and aesthetic delight to a considerable minority successfully resisting the onslaught of philistinism. The long-expected surrender of high art to mass media had not taken place. The votaries of literature were naturally consoled by this confirmation of their cherished belief, he opined.

IUCAA Research Scholars

The Inter-University Centre for Astronomy & Astrophysics (IUCAA) invites applications for its graduate school leading to a Ph.D. degree in Astronomy and Astrophysics. Selection for the academic year 1993-94 will be made on the basis of a written test and interviews to be held in Pune sometime early July 1993. The academic programme will commence in August 1993.

Selected students will undergo graduate courses in physics, astronomy and related areas for two semesters. Satisfactory completion of the courses will allow students to register for a Ph.D. programme. The graduate courses will be organised in collaboration with the National Centre for Radio Astrophysics (NCRA) of the Tata Institute of Fundamental Research (TIFR), Pune Campus. The total duration of the Ph.D. programme, including the graduate school, will be 4 years.

Students with M.Sc. in physics/applied mathematics/astronomy/computer science or Bachelor's or Master's degree in engineering with adequate background in physics and mathematics are eligible to apply. Candidates with an engineering background and interest in experimental physics are also encouraged to apply.

Candidates expecting to obtain their degrees by July 1993 may also apply. All selected candidates will be required to clear the UGC/CSIR NET or GATE examination within one year of admission to the research programme, if they have not already done so.

Each student will be paid a scholarship of Rs. 1,800 p.m. for the first two years and Rs. 2,100 p.m. for the remaining two years. In addition there will be a contingency grant of Rs. 7,500 p.a. and other benefits including free accommodation. The continuation in the scholarship is however subject to satisfactory performance of the student every year.

Application forms can be obtained by writing to the 'Coordinator, Core Programme, IUCAA, Post Bag 4, Ganeshkhind, Pune-411007 alongwith 24 x 11 cm self addressed stamped (Rs. 2.00) envelope. Completed applications should reach IUCAA not later than April 1, 1993.

Oriental Institute Turns 100

Conceived as a store house of rare manuscripts, the Oriental Institute in Baroda has over the years grown into a world renowned centre for research in Vedic religion, literature and the fine arts.

Set up by Maharaja Sayajirao III a century ago, the institution has so far published 174 volumes on various subjects like the Vedas, Vedanga, tantra, yoga and encyclopaedic works in the world-famous Gaekwad Oriental Series. The jewel in the institute's crown however is the critical edition of the Valmiki Ramayana prepared in line with universally accepted norms.

According Dr R.T. Vyas, Director, the institute has recently established the Department of Indo-Iranian Studies which will try to trace the connection between Vedic religion and the ancient Iranian culture reflected in the Zen Avesta.

Other projects proposed to be taken up include the setting up of a department of indo-european studies and a Sanskrit sahitya akademi which the state government had agreed to establish to mark the institute's centenary this year.

To mark its centenary celebrations an exhibition of old manuscripts, writing materials and antiquities dating back to 1500 A.D. is being organised. Dr Vyas said that about 30,000 manuscripts, hand-written books and pictures would be displayed for the first time since the institute was set up.

An international seminar on the Valmiki Ramayana and technology in Sanskrit literature, and a national seminar on the Puranas had been planned as part of the centenary celebration, Dr Vyas added.

Peace March for Communal Harmony

The NSS Unit, Kakatiya University, Warangal organised a Peace March and a Meeting to promote communal harmony and social amity in which more than 500 NSS volunteers drawn from different units of Degree and Junior Colleges participated. Dr. K. Jayashankar, Vice-Chancellor, Kakatiya University presided over the meeting. Prominent persons from different religions—Buddhist, Jain, Agakhan, Muslim, Sikh, Christian and Hindu also participated in the peace March and Meeting.

Rev. Sister Leens, speaking on the occasion, highlighted the importance of peace and social amity and emphasised the need to have peace in the family, society and in the Nation. According to her, peace is the true glory of the Nation and the result of self sacrifice should be ensured at any cost in order to achieve communal harmony in the country.

Colonel Gill stated that peace is the need of the hour and the citizens of the nation, especially the youth, leaders of tomorrow, must be ready to work for promoting the peace.

According to Abdul Khadar, Ex-Chairman, Municipal Council, Warangal "Nation is in Crisis". One should avoid narrow mindedness and that Indian heritage and culture must be preserved at any cost.

Anwar Ali Mandhani, in his message stressed on various burning problems confronting the nation and said that the present problem of communal disturbances should not be allowed at any cost.

Prof. C. Sivarama Krishna Rao advised the gathering to rededicate themselves to the Communal Harmony and everybody should develop the concept of religious tolerance and Social Amity.

Dr. K. Jayashankar, Vice-Chancellor, Kakatiya University, in his presidential message, highlighted the need for a secular outlook and said that the future of the country depended upon the youth and youth should carry the message of peace to nook and corner of the country.

Professor Kaula Honoured

Prof P N Kaula, eminent teacher in Library and Information Science, who was last year invited by the Ministry of Education and Science, Govt. of Spain to assist the Universidad Autnoma de Madrid in the project 'Knowledge Organisation and Expert System' has been awarded "Consejera de Honor" (Honorary Counsellor) of the International Council for Professional Education in recognition of his professional eminence in the field. Prof Kaula has also been honoured with the Insignia of the "Academician of the City of Zeragoza" by the Dean of Philosophy and Letters of the University of Zeragoza. Prof Kaula has been nominated Director of the International Institute of Higher Studies of Knowledge, Education and Professional Training for the development of the Third World.

Prof Kaula is already an "Academician" of the Brazilian Academy of Humanities, Sau Paulo, Brazil, conferred on him in 1975.

News from Agricultural Universities

Balanced Use of Fertilizers

Research has been conducted on the balanced application of fertilizer to the crops by the All India Co-ordinated Soil Test Crop Response Correlation Scheme (I.C.A.R. sponsored) and the Mahatma Phule Krishi Vishwavidyalaya, Rahuri. One of the achievements of these experiments conducted under this scheme has been application of fertilizer after testing soil for getting the targetted crop yield in which fertilizer recommendation can be based upon soil fertility, crop requirement, nutrient use efficiency and possibly nutrient interactions for present yield targets. This approach has received considerable attention for propa-

gating balanced use of fertilizers because it reduces cost on fertilizer and increases profit yield and per unit area.

In order to educate farmers about the balanced use of fertilizers and to gather more experience on large scale, field application of this approach, Soil Test Crop Response Project at the MPKV, Rahuri conducted 94 trials on crops of bajra (Pearl millet) tur (Arhar), wheat and gram in different villages and 15 demonstrations were organised during rabi season of 1992-93 at Beragaon Nandur village (Rahuri) of this campus. Dr.S.K. Dorge, Vice-Chancellor, recently visited these demonstrations, trials and

guided the farmers about the balanced use of fertilizers. Based on the crop stand of these trials the Vice-Chancellor and farmers expected that these trials would definitely achieve the targets of yield and certainly more than the usual harvest received by the farmers.

Sixteen demonstration trials were conducted on wheat during the last rabi season of 1991-92. The results showed that yields of wheat in general were higher under targetted yield treatments than the general recommended dose of fertilizers. This technology, on an average, saves expenditure of Rs. 300 per hectare and gives more benefit of Rs. 2150/- per hectare over the existing use of fertilizer by the farmers.

National Integration Camp

A ten-day National Integration Camp was recently organised at the Mahatma Phule Agricultural University. Sponsored by Ministry of Human Resource Development, Govt. of India, the camp was inaugurated by Dr. B.H. Mogal, Dean, Faculty of

Agriculture. About 150 NSS volunteers including programme officers of 12 universities participated in the programme.

During this period the NSS volunteers and programme officers dug the contours on 4 acres of land, cleaned 50 meters long drain, and prepared 10,000 ploythene bags for raising seedling in the university nursery. They prepared the Nala Bundings and constructed the roads.

Lectures were also arranged on this occasion. The topics included (i) Watershed Development Programme, (ii) Anti Dowry movement, (iii) Development of villages, (iv) Processing of fruits and vegetables, (v) Pollution and forestry (vi) AIDS (vii) National Integration.

"The students should be conscious about their duties to promote development of our nation," said Dr. S.K. Dorge, Vice-Chancellor at the valedictory function.

"Glimpses of Girasia Life-I"
"19th Century Russian Literature: Alexndrovich Gancharov"

12.3.93

"Problem Child"

"By the People-VI. Groups and Political Process and Organizing a Group"

13.3.93

"The Art of Michelangelo"

Dr. Kothari Passes Away

An Eminent physicist and educationist, Dr. D.S. Kothari passed away on February 4, 1993. He was 87.

A recipient of Padma Bhushan and Padma Vibhushan, Dr Kothari headed the Education Commission (1964-1966) and the University Grants Commission (1961-1973). He also served as the Chancellor of the Jawaharlal Nehru University and first chairman of the Commission for Scientific and Technical Terminology and was scientific adviser to the Minister for Defence for over a decade.

Dr. Kothari held the positions of president of the India Physical Society and the Indian National Science Academy and general president of the Indian Science Congress.

Born in Udaipur in 1906, Dr. Kothari had his early education there and in Indore and obtained M.Sc. degree from the Allahabad University. He got his Ph.D. in physics from the Cambridge University and was appointed Reader and later head of the physics department of the Delhi University. His book "Nuclear explosions and their effects", published by the publication division, was translated into German, Russian and Japanese.

News from UGC

Countrywide Classroom Programme

Between 9th March to 13th March, 1993 the following schedule of telecast on higher education through INSAT-1D under the auspices on the University Grants Commission will be observed. The programme is presented in two sets of one hour duration each every day from 1.00 p.m. to 2.00 p.m. and 4.00 p.m. to 5.00 p.m. The programme is available on the TV Network through the country.

Ist Transmission

1.00 p.m. to 2.00 p.m.

09.3.93

"Electrochemistry"

"Ways of Thinking-I. Mind Matters"

"Traditional Customs: Maternal and Neonatal Care"

10.3.93

"Mesembs - The Flowering Pebbles"

"Mapping our Earth"

"Eyes in the Sky - Remote Sensing-I"

11.3.93

"Understanding Transistor Radio Receiver - I"

"New Horizons"

"Week Ahead"

Ind Transmission

4.00 p.m. to 5.00 p.m.

INDIRA GANDHI NATIONAL OPEN UNIVERSITY

Schedule of Telecast for the period 1 March to 31 March 1993

Time : 6.30 a.m. to 7 a.m.

Date/day	Academic Programme	Title
3.3.93 Wednesday	Rural Development	Garibi aur Garibi Unmoolan I
5.3.93 Friday	Management	Probability Applications
8.3.93 Monday	Bachelor's Degree Programme	Upanyas III
10.3.93 Wednesday	Rural Development	Garibi aur Garibi Unmoolan II
12.3.93 Friday	Management	Demand Forecasting
15.3.93 Monday	Bachelor's Degree Programme	A Window to the Universe
17.3.93 Wednesday	Food & Nutrition	1. Aapka Bhojan Kitna Surakshit 2. Open Channel Institution Building
19.3.2.93 Friday	Management	
22.3.93 Monday	Bachelor's Degree Programme	Brahmand Ki Khoj
24.3.93 Wednesday	Distance Education	Communication Across the Distance
26.3.93 Friday	Management	HRD - In Indian Organisations
29.3.93 Monday	Bachelor's Degree Programme	Measurement of Damages
31.3.93 Wednesday	Library & Information Science	Dewey Decimal Classification - An Introduction

9.3.93

No Telecast

10.3.93

"Diversity of Bats"

"Corrosion - II"

"Identifying Fibres"

11.3.93

"Computer Around Us"

"Trouble Shooting Techniques"

"Seeing is Believing or Believing
is Seeing"

12.3.93

"The Art of Michelangelo"

"New Horizons"

"The Week Ahead"

13.3.93

No Telecast

Book Review

On Library Networks

L. J. Haravu*

Kaul, H.K. *Library networks : an Indian experience*. New Delhi : Virgo Publications, 1992, 264pp. Rs. 390.

The purpose of the book (arising out of a Master's degree thesis submitted to the Bombay University) is a laudable one, viz., to find out which networking models and methodologies would suit India (p. 18). This has been sought to be achieved by looking at the present scene in library networking in UK and USA and comparing it with what is planned for in two city-wide library networks in India, viz., DELNET and CALIBNET, and the proposed national academic library network, INFLIBNET, which as of now is largely still a plan. The Birmingham Libraries Cooperative Mechanization Project (BLCMP) in UK has specifically been compared with the networks planned for in India.

The study is reported under the following themes: library cooperation, automation in Indian libraries, networks planned, hardware and software, network architecture, communications, standards and governance and management issues.

The historical global overview of library cooperation cites events (taken from other sources) which are questionable as landmarks in library cooperation (pp. 29-34). For instance, it is not clear how S.R. Ranganathan's statement in 1951 that library service, bibliographic organization and library classifica-

tion recognise no national or political boundaries or how a catalogue of manuscripts compiled in 1868 could be said to be landmarks in library cooperation. The author does not bring out the lessons that some of the more recent landmarks have for networking in Indian libraries. The traditions of centralized cataloguing in US and UK, their commitment to standards in classification, bibliographic description, and indexing that have been the bedrock on which library networks in those countries, and products such as MARC, have laid their foundation, have not been dealt with convincingly in the book.

The survey of automation in Indian libraries is painstaking but not analytical in that it does not state the gaps that exist which must be filled in the context of library networks in India. On the question of hardware and software, no assessment has been made of the software in use at BLCMP in UK. It would have been valuable if the author had gone into greater detail about the capabilities of the BLCMP software, the services in BLCMP that are network-provided, and those that are locally generated, and whether each of the libraries in the BLCMP network use a different library automation package, etc.

The options available to Indian library networks of importing a proven networking package seems to have been completely ignored in the study. The cost-effectiveness of buying a package as a means of making quick progress in networking is a genuine alternative and the

experience of Singapore which has made rapid strides in library networking is ample proof of this.

The comparison of DELNET, CALIBNET and INFLIBNET with BLCMP (pp. 81-86) is theoretical at best since many of the services of the Indian networks have still to see the light of day. On the other hand the author would have done well if he had provided information on how BLCMP went about planning their network, what studies they conducted and how they arrived at decisions concerning hardware, software, training, standards and connectivity. Similar information on the how and why of DELNET and CALIBNET decisions would have been valuable to planners of other city-wide networks in India. It is not clear why a particular topology for DELNET was chosen; what factors in the libraries being networked and what technical factors in fact determined the topology. Also, since DELNET has been operational for some years now, it would have been extremely useful if the author had provided his readers with his experience of its implementation, the difficulties faced, some measures of resource sharing accomplished, etc.

An important flaw of the study is the lack of enough attention by the author to policies, culture, attitudes and values of librarians, top managers of academic and research institutions, and policy makers that are pre-requisites for successful library networking. Analysis of these in networks in the US and UK and comparison with what obtains in India would have been valuable. For instance, the practice in some Indian institutions where the librarian is asked to pay for the books lost (stolen) on open access shelves, or the archaic institution of professor-in-charge of the library in an university or college are probably typically Indian and positively inimical to resource

* *Manager II, Library and Documentation Services, International Crops Research Institute for Semi Arid Tropics, Patancheru (A.P.)-502324.*

sharing and networking. If librarians cannot be seen or do not see themselves as managers and decision makers of their facilities, there will be little or no resource sharing. The author would have done well had he looked critically at policy issues, and at the attitudes of Indian librarians to resource sharing and networking vis-a-vis that in the UK and US. Technology alone is not enough for successful library networking. The people and policies behind the technology are as important if not more, and the book must be flawed for being over concerned with technology.

Libraries in the US distinguish clearly between library consortia and utilities. Consortia are formed by libraries sharing common subject interests or belonging to a specific geographic area, while utilities (e.g. OCLC) provide one or other kind of service to libraries, consortia and others. DELNET and CALIBNET may be considered to be consortia. Each consortia is based on well defined agreements between the participating libraries on the one hand and between the consortia and utilities on the other hand. The author has not focused enough attention on the working of consortia

in the UK and US and the kinds of inter-library and consortia-utility agreements (e.g. between the consortia and a courier service) that are essential to networking.

All said and done, the book is a painstaking effort. It provides its readers with useful background information about library cooperation, and the technology of cooperation and networks. It should be particularly useful to students of library science, although it falls short of fulfilling its objective of pointing to suitable models and methodologies for library networking in India.

COMMUNICATION

Foreign Students in Germany

The acts of physical aggression which have, over the past few months, been directed against foreigners and which of late have also affected some of our scholarship holders, have not only caused great dismay here in Germany, but have also cast a dark shadow on the image of our country abroad. There, hostility towards foreigners is frequently seen as an indication that Germany is taking a new sinister direction. That this spirit of aggression does not reflect the real feelings of the German population is proved by the demonstration of November 8, in which 350,000 citizens gathered in Berlin and protested against hatred of foreigners. This was the greatest public statement of political conviction mounted by German citizens since the historic procession of demonstrators on November 4, 1989, through East Berlin. Since then, demonstrations of solidarity against the radical right, against the hatred of foreigners, have taken place in numerous other German cities. State authorities have – after excessive delays – taken more decisive measures. Increasingly,

those convicted of violence are given severe prison sentences. But, regrettably these measures do not command anything like the same attention in the media as do the outrages committed.

I condemn in the strongest possible terms the acts of physical aggression against foreigners in our country; and I am of the opinion that we, the majority of the citizens, both can and must resist them successfully. Even now, by means of swift and resolute action, we can achieve a shift in public mood that will bring about the social marginalization of the violent minority.

I am filled with horror and revulsion at the increasing emergence of anti-semitic slogans and actions in our country which, I believed, could never occur again after the horrors of Hitler's Reich.

On no account must these events be glossed over. Yet shame and anger are not enough. The German political system is now called upon – as are we all – to nip these tendencies in the bud, to hold fast to the practices of robust democracy and to make it clear that we uncondition-

ally defend the inalienable dignity of every human being, of whatever descent, colour, or religion.

Of course, the present situation in our country is fraught with problems. East Germans find themselves confronted by changes in their way of life to an extent that hardly anybody had expected. Even in Western Germany people have slowly begun to realize that here, too, changes are now occurring which, when the Berlin Wall came down in 1989, only a very few foresaw. Two parts of a nation are growing together – parts which in 40 years have each pursued a very distinct path. That such an immense, historically unparalleled process is accompanied by violent shocks can scarcely cause amazement. But that it should lead to criminal excesses, to displays of aggression against innocent parties, must be categorically condemned.

A policy of systematic resistance to these excesses and the punishment of those found guilty must be a matter of course in any state that sets store by the rule of law. The causes certainly deserve investigation and explanation, but they must not serve as excuses – on no account

should we be deterred from swift action.

The German Academic Exchange Service has, in the forty years of its post-war history, supported well over half a million home and foreign students and scholars of all disciplines for several weeks or even years. In the course of 1991, more than 51,000 participants took part in our various programmes.

Thanks to the German Academic Exchange Service, 23,000 German students and academics were able to spend time abroad. There they were foreigners – and welcome guests. 27,000 foreigners came, on our invitation, to Germany for the purposes of study and research, and they left our country as friends.

We will neither forfeit nor surrender this reservoir of cultural openness, human contacts, and scholarly growth. Nobody can live in the world without friends and partners. Scholarship has from time immemorial depended on international exchanges. Indeed, it is one of its very hallmarks that it crosses frontiers. That the economy needs

international exchange for its survival is a truism, above all in our country where every third job depends on the world beyond our national frontiers.

It is of utmost urgency that we, with every means in our power, resist attacks on hostels and on individual people – otherwise a climate of uncertainty and fear will be created which would be depressing and shaming for us all.

All of us – teachers and students of our more than 200 member institutions of higher education – are now called upon to stand up for law and order, peace and tolerance, non-violence and civilized dealings with each other. We can influence the climate in a positive sense. The German Academic Exchange Service is ready to help wherever it can – even by unconventional means if need be. And, of course, we shall endeavour to use all means to influence public opinion. We live by the motto : "Without foreigners we would be poorer – humanly, intellectually, economically". To this end we shall in the future and wherever possible act in collaboration with

other scholarly organisations. We are particularly grateful that German students have declared their solidarity with their foreign colleagues and thereby have given such an admirable example of courage and commitment to democratic principles.

We expect that our friends and partners abroad will observe events in our country attentively and objectively. The situation indeed gives cause for concern; but on the other hand we should not be talked into believing that the entire German people, which hitherto has lived in peace with its neighbours and with more than five million foreigners on its own territory, has overnight fallen prey to extreme right-wing and racist attitudes. The truth is that there is only a small violent minority which must be contained as quickly as possible. I ask you all to be watchful to this end.

Prof. (Dr.) Theodor Berchem
President
German Academic Exchange
Service (DAAD)
Bonn.

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THESES OF THE MONTH

A list of doctoral theses accepted by Indian Universities

HUMANITIES

Philosophy

1. Bilthare, Anurag. *Adhunik Bhartiya chintan mein ashubh ke samasyayen*. H S Gour. Dr S S Negi, Department of Philosophy, Dr Hari Singh Gour Vishwavidyalaya, Sagar.
2. Hota, Sabitarani. *A critical study of the concept of philosophy with special reference to L Wittgenstein, G Ryle and J L Austin*. Kurukshetra.
3. Padhy, Hara Prasad. *Wittgenstein's philosophy of grammar: A reconstruction*. Hyderabad. Dr R C Pradhan, Reader, Department of Philosophy, University of Hyderabad, Hyderabad.
4. Sahoo, Bhaskar Chandra. *The problem of other mind*. Durgawati. Dr J P Shukla, Prof and Head, Department of Philosophy, Rani Durgawati Vishwavidyalaya, Jabalpur.
5. Saini, Krishan Chand. *A critical study of J Krishnamurti's philosophy of education*. Kurukshetra.
6. Sharma, Rajni. *Samkaleen Bhartiya darshnikon ke drishti mein Bhartiya sanskriti ka swarup: Mahatma Gandhi, Shri Aurobindo, Dr Radhakrishnan ke vishesh sandarbh mein*. Durgawati. Dr J P Shukla, Prof and Head, Department of Philosophy, Rani Durgawati Vishwavidyalaya, Jabalpur.
7. Sreekala Devi, S. *Concept of man in the works of Dostoyevsky*. Calicut. Dr V C Narayana Das, Prof, Department of Philosophy, University of Calicut, Calicut.
8. Suthar, Rohtas Kumar. *A critical study of the socio-ethical values in Ram Charit Manas*. Kurukshetra.
9. Tongper, E Richard. *The idea of a world view and understanding people*. NEHU. Prof Mrinal Miri, Department of Philosophy, North-Eastern Hill University, Shillong.

Religion

1. Gurnek Singh. *Twentieth century exegesis of Guru Granth Sahi by Sikh scholars: A critical study*. Punjabi. Dr Darshan Singh, Reader, Department of Religious Studies, Punjabi University, Patiala.
2. Harbhajan Singh. *Sikh dharam vich Jyoti da sankalp*. Punjabi. Dr Darshan Singh, Reader, Department of Religious Studies, Punjabi University, Patiala.
3. Urminder Kaur. *Institutional development of Sikhism: A philosophical perspective*. Punjabi. Dr G S Sandhu, Lecturer, Department of Philosophy, Punjabi University, Patiala.

Fine Arts

1. Gurbax Singh, Jatinder. *The Vellore Fort: A monograph on the fort and its buildings*. Madras.

Music

1. Bhagavathi, Y. *Thyagaraja's Nauka-Caritam: A study*. Madras.

2. Rao, Suvarnalata. *Acoustical perspective on raga-rasa theory*. SNDT. Dr Prabha Atre, Head (Retd), Department of Music, Shreemati Nathibai Damodar Thackersey Women's University, Bombay.

Theatre

1. George, Jose. *The performance theory of environmental theatre: Schechnerian theories and their conceptual and structural links with the classical and semi classical theatres of Kerala*. Calicut. Dr Vayala Vasudevan Pillai, School of Drama, Dr John Matthai Centre, Aranttukara, Trichur.

2. Sen, Gita. *Adhunik Bangla natake prayagritir bibartan*. Rabindra Bharati.

3. Sinha, Somnath. *Contribution of the Tagore family of Jorasanko in the history and development of Bengali theatre: A historical assessment*. Rabindra Bharati.

Language & Literature

English

1. Antony, A. *Biblical themes and imagery in Hopkins's poetry*. Kerala. Dr Elias Valentine, Prof (Retd), Centre for English Language Teaching, Institute of English, University of Kerala, Thiruvananthapuram.

2. Anupama. *Hemingway's Europe: A study of his fiction*. Kurukshetra.

3. Bambra, Ravinder. *The comic sense in R K Narayan*. Ravishankar. Dr J Srihari Rao, Reader, School of Studies in English, Pt Ravishankar Shukla University, Raipur.

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EDUCATIONAL PSYCHOLOGY

Subba Rao, G. Creativity needs careful handling. *The Hindu* 5.1.93.

WHAT A brilliant student (Editorial). *The Hindu* 10.1.93.

EDUCATIONAL SOCIOLOGY

Agarwal, U C. Caste and class-I: Mandal report interpretations. *The Statesman* 15.1.93.

_____. Caste and class-II: What Ambedkar did not say. *The Statesman* 16.1.93.

Ahmed, Firoz Bakht. Are the Indian Muslims changing? *The Hindustan Times* 10.1.93.

Basheer Hussain, M. Frozen on job reservation lane. *Deccan Herald* 11.1.93.

Chacko, Cherian M. The new campus culture. *The Hindustan Times* 9.1.93.

Dey, Prasenjit. Higher education: A student's eye-view. *The Assam Tribune* 17.1.93.

Newton, Charles. Absurd accent on graduates. *The Tribune* 31.1.93.

Rajput, J S. Education: Focus on weaker sections. *The Times of India* 16.1.93.

Saxena, D C. Education as a critique of society. *The Hindu* 31.1.93.

WHEN MANDAL is a burden (Editorial). *The Hindustan Times* 18.1.93.

EDUCATIONAL ADMINISTRATION

Amrik Singh. Fund cuts a blow to higher study. *The Times of India* 9.1.93.

_____. Staff colleges revisited. *Deccan Herald* 23.1.93.

Banerjee, Benodini S. Is democratic administration of universities "dysfunctional"? *Indian Express* 21.1.93.

Bora, Kamaleswar. The autonomous colleges and Assam. *The Assam Tribune* 14.1.93.

Kanwaldeep Singh. Autonomous colleges go abegging. *Indian Express* 11.1.93.

MEN OF calibre as V-Cs (Editorial). *The Hindustan Times* 23.1.93.

Nanjundappa, D M. Cynicism strikes deep roots. *Deccan Herald* 23.1.93.

_____. How to win teachers and influence students. *Deccan Herald* 30.1.93.

Newton, Charles. Education: India's bane. *The Tribune* 3.1.93.

EDUCATION & POLITICS

Kitchlu, Kapil. Education is the only answer. *Indian Express* 16.1.93.

CURRICULUM

Das, Manoj. New lessons from recurring wrongs. *Deccan Herald* 16.1.93.

Mago, P N. Art education and art. *Patriot* 17.1.93.

LANGUAGE & LANGUAGE POLICY

Chintamani, Pandu. Speaking 'Hinglish' as a foreign language. *The Economic Times* 10.1.93.

LANGUAGE PLEASE (Editorial). *The Statesman* 9.1.93.

Newton, Charles. Flare for spelling. *The Statesman* 17.1.93.

SCIENCE EDUCATION

CLICHES FOR the people (Editorial). *The Times of India* 5.1.93.

FIGHTING OBSCURANTISM (Editorial). *The Hindustan Times* 6.1.93.

Nadkarni, Vithal C. Star trek. *The Times of India* 17.1.93.

NEGATIVE SIGN (Editorial). *Deccan Herald* 6.1.93.

Noronha, Frederick. Science technology: Drift and disinterest at science meet. *Deccan Herald* 18.1.93.

Ramachandran, R. Science scan: Perfect disorder. *The Economic Times* 16.1.93.

SCIENCE AND common man (Editorial). *National Herald* 5.1.93.

SCIENTIFIC TEMPER (Editorial). *The Hindu* 5.1.93.

Sikka, Pawan. Saving science: Third side of triangle. *The Hindu* 5.1.93.

STAR-CROSSED science (Editorial). *The Hindustan Times* 7.1.93.

VOCATIONAL EDUCATION

EDUCATION FOR employment (Editorial). *The Hindu* 2.1.93.

Lal, Nita. Private institutions: Playing a vital role. *The Economic Times* 27.1.93.

Mukund, Chandra Kumar. IET carves a niche for itself. *The Pioneer* 28.1.93.

Sharma, R. There's a new and growing interest in tourism courses. *The pioneer* 14.1.93.

Subhash, V K. Engineers with MBA degrees in demand. *The Pioneer* 28.1.93.

Tewari, Ajay. Vast scope for technical hands. **The Pioneer** 28.1.93.

TEACHERS & TEACHING

Alivelu, A Survarna. Making teaching more respectable. **Deccan Chronicle** 31.1.93.

Borooah, Bazlur Rahman. Role of teachers in higher education. **The Assam Tribune** 2.1.93.

Kathuria, Shalini and Subramaniam, Ganga. Teaching the tiny tots. **The Hindustan Times** 10.1.93.

Khanna, Sunita. Caring teacher is what children need. **Patriot** 17.1.93.

Prahallada, N N. Teacher, instruct thyself. **Deccan Herald** 9.1.93.

Rajagopalan, T. Peace on education front. **The Hindu** 1.1.93.

Sitaram, K. To enliven the teaching of mathematics. **The Hindu** 26.1.93.

Varalakshmi, R S R. Research at the cost of teaching: Some realities. **The Hindu** 12.1.93.

Verma, C S. Institutes to rescue of 70,000. **The Pioneer** 28.1.93.

COUNSELLING & GUIDANCE

Goel, S S. Career counsel begins at home. **The Economic Times** 31.1.93.

EDUCATIONAL RESEARCH

Arunachalam, Subbiah. Research: Joining hands across the globe. **The Economic Times** 23.1.93.

EDUCATIONAL EVALUATION

Shivaram, Choodie. Misplaced marks cards, callous evaluators. **Deccan Herald** 30.1.93.

ECONOMICS OF EDUCATION

Patkar, D N and Patankar, A V. Higher education should pay for itself-I. **Free Press Journal** 19.1.93.

_____. Higher education should pay for itself-II. **Free Press Journal** 30.1.93.

LIBRARIES & BOOKS

Banerjee, Purba. Catching the readers young. **National Herald** 10.1.93.

Davidar, David. Of writing, writers and books. **The Hindu** 10.1.93.

Deb, Upal. Book fair: A stage for cultural unity. **The Assam Tribune** 17.1.93.

INFORMATION ACCESS: Networks continue to widen (Editorial). **The Hindu** 27.1.93.

Joshi, Manoj Kumar and Mishra, Sanjay K. Career information service. **Patriot** 22.1.93.

Jussawalla, Adil. Library memories. **The Tribune** 24.1.93.

Khubchandani, Lata. Booked. **The Times of India** 23.1.93.

Mitra, Ratnabali. Quiz books trigger a new culture in science learning. **The Pioneer** 13.1.93.

Nuttall, Nick. Library books via phone lines. **The Statesman** 8.1.93.

Theodore Baskaran, S. A travelling library of cinema. **Deccan Herald** 9.1.93.

PHYSICAL EDUCATION & SPORTS

Prahallada, N N. Toning up primary school health programme. **The Hindu** 26.1.93.

SPECIAL EDUCATION

Klair, M. A rag-tag tale. **The Hindustan Times** 10.1.93.

Sharma, Pankaj. Children of a lesser god. **National Herald** 24.1.93.

Singh, M Raghuram. Print media role in cause of disabled. **The Hindu** 5.1.93.

WOMEN'S STUDIES

William, Lugalambi George. Students they call the '15 girls'. **Deccan Herald** 31.1.93.

WOMEN'S EDUCATION (Editorial). **Deccan Herald** 30.1.93.

ADULT EDUCATION

NEW THRUST to literacy (Editorial). **The Hindu** 18.1.93.

Padmanabhan, C B. Total literacy campaign in Tamil Nadu: An evaluation. **The Hindu** 26.1.93.

ELEMENTARY & SECONDARY EDUCATION

Inderpal Singh. School for thought. **The Tribune** 3.1.93.

Menon, Sreelatha. Kerala school kids rear goats. **Indian Express** 27.1.93.

Mojumdar, Modhumita. Whither primary education for all? **The Statesman** 3.1.93.

INSTITUTIONAL PROFILE

Jha, Alok K. Fall from grace: St Stephen College (Delhi). **The Pioneer** 17.1.93.

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Shivaram, Choodie. Bangalore University: A super mess. **Deccan Herald** 23.1.93.

Wilson, Anil. "Half-truths laced with fabrications": St Stephen College (Delhi). **The Pioneer** 31.1.93.

BIOGRAPHICAL PROFILE

Alladi, Krishnaswamy. A contemporary of Ramanujan: L J Rogers. **The Hindu** 3.1.93.

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Name of University/Institution	Exam(s) passed	Year of passing	Division/ class with position, if any *	Percentage of marks obtained.	Subjects taken.
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* In case no Division/Class is awarded and only grading is done, exact percentage of marks and conversion formula adopted may be mentioned

6. (a) Details of Professional/Practical training and research experience, specifying period and number of papers published.
(b) Details of employment after obtaining requisite educational Qualifications with date of employment and name of Employers.

(c) Name of Orga- nisation/ Firm/Industry where employed	Date of appoint- ment	Date of leaving	Post/ desig- nation	Main duties	Scale of pay	Total pay	Reasons for leav- ing
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7. Name, designation and address of two referees who are acquainted with the work of the candidate.
8. Have you been abroad? If so, give full particulars of the country and the period. Also mention the date of return to India.
9. Proposed programme of training specifying details on a separate sheet.
10. (i) The work at present engaged in (ii) future plans/prospects after the proposed training (iii) nature and programme of training desired (iv) how are these related to the technical or economic development of India? Please enclose a write-up of about 500 words in this behalf.

NOTE : (1) Attested copies of all certificates regarding proof of age, qualification from Higher Secondary onwards must be attached with the application. (2) Candidates must send their application fully sponsored by their employers. However advance applications will be considered provisionally provided received complete in all respects, pending sponsored by employers (N.B. the candidates called for interviews shall be required to bring letters from their referees alongwith them.) Incomplete application and without sponsorship letters will not be entertained for interview.

Place :

Date :

(Signature of the candidate)

davp 92/619

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गुजरात विद्यापीठ

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महात्मा गांधी परिसर, अहमदाबाद

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समकक्ष उपाधि प्राप्त के लिए, जो गुजराती नहीं जानते और हिन्दी माध्यम से पढ़ सकते हैं, उनके लिए भी कुछ सीटें अतिरिक्त रखी जाएंगी। (1.15) प्रकाशन विज्ञान: पुस्तक या सामयिक प्रकाशन के व्यवसाय हेतु आवश्यक एक वर्षीय अनुस्नातक डिप्लोमा (1.16) पत्रकारिता का दो वर्ष का पारंगत कक्षा का पाठ्यक्रम (1.17) भाविसमाज (फ्यूचर स्टडीज: ग्राम समाज के विज्ञान तकनीकी के संदर्भ में) विषयक एक वर्षीय डिप्लोमा पाठ्यक्रम (1.18) प्रयोजनमूलक हिन्दी: हिन्दी भाषा में कामकाज करने वालों के लिए छह महीने का प्रमाणपत्र तथा एक वर्षीय हिन्दी-गुजराती अनुवाद पाठ्यक्रम (1.19) कन्नड़, मलयालम, बंगाली, तेलुगु, मराठी, उर्दू, तमिल भाषाएं सीखने के लिए प्राथमिक कक्षा के वर्ग तथा अनुपारंगत संशोधन का डिग्री कोर्स (1.20) संग्रहस्थान विद्या (म्यूजियोलॉजी) का एक वर्षीय साप्ताहिक वर्गों का डिप्लोमा (1.21) सुगम संगीत का एक वर्षीय डिप्लोमा (1.22) एक वर्षीय दृश्य-श्रव्य (ऑडियो विज्युअल) साधन एवं विडियो फोटोग्राफी के विडियो निर्माण का डिप्लोमा (1.23) पत्र व्यवहार द्वारा गांधीविचार अनुस्नातक (एम.ए.): गांधीजी के जीवन एवं कार्य विषयक तथा गांधीविचार के सामाजिक, आर्थिक, राजनीति, धार्मिक, अध्यात्म और शैक्षणिक पहलुओं विषयक अनुस्नातक (एम.ए.) कक्षा का यह अभ्यासक्रम दो वर्ष का रहेगा। जिन्हें उपाधि न लेनी हो उन्हें एक वर्ष के चार प्रश्नपत्रों का डिप्लोमा प्रदान किया जाएगा। जो स्नातक न हों किन्तु जिनकी आयु 21 वर्ष से अधिक हो तो वे भी गांधीविचार में डिप्लोमा परीक्षा देकर डिप्लोमा प्रमाणपत्र प्राप्त कर सकेंगे। (1.24) पत्रव्यवहार द्वारा शिक्षण पारंगत — प्राथमिक बुनियादी अध्यापन मंदिरों में अध्यापक के पद पर कार्यरत शिक्षकों के लिए रखा गया पाठ्यक्रम। (1.25) व्यायाम पारंगत (मास्टर ऑफ फिजीकल एज्युकेशन) (एम. पी. इ.) सादरा व्यायाम महाविद्यालय में दो वर्षीय अनुस्नातक पाठ्यक्रम।

(2) अनुपारंगत (एम.फिल.) क्रम एक में सूचित विषयों के उपरान्त शान्ति-संशोधन, विज्ञान-अहिंसा और भावि समाज (फ्यूचर स्टडीज) के अभ्यासक्रम में जिन्होंने पारंगत (एम. ए.) या समकक्ष परीक्षा 55% अंकों के साथ पास की हो, वे ही इस पाठ्यक्रम में प्रवेश प्राप्त कर सकेंगे। केवल अनुपारंगत (एम.फिल.) के अभ्यासक्रम के लिए ही एक वर्षीय पूर्ण समय अभ्यास करने वालों को मासिक 1000/- रुपए की मर्यादित संख्या में शिष्य वृत्ति की सुविधा है। यू.जी.सी. की अखिल भारतीय कसौटी में उत्तीर्ण होने वालों को मर्यादित संख्या में मासिक 1800/- रुपए की शिष्यवृत्ति दी जाएगी।

(3) **विद्यावाचस्पति (पीएच.डी.):** दो वर्ष के अभ्यास क्रम में प्रवेश हेतु अनुपारंगत की उपाधि में 55% अंक आवश्यक हैं।

(4) **विद्यावारिधि (डी. लिट.):** विद्यावाचस्पति (पीएच.डी.) के लिए, विद्यावारिधि (डी.लिट.) की उपाधि का दो वर्षीय अभ्यासक्रम है। पारंगत (एम.ए.) या अनुपारंगत (एम. फिल.) के स्वाध्याय पद्धति के अभ्यासक्रम में या पत्रव्यवहार अभ्यासक्रम में भी समूहजीवन के अनुभव के लिए शिविरों में तथा प्रवास में सम्मिलित होना अनिवार्य है। समूहजीवन के बौद्धिक एवं व्यावहारिक कौशल्य के प्रत्येक विषय का आंतरिक एवं बाह्य मूल्यांकन किया जाएगा। ग्राम विषयों के अभ्यासक्रमों को प्राथमिकता देने की दृष्टि सभी अभ्यासक्रमों में, ग्राम विषय के रचनात्मक कार्यों के अनुभव को विशेष रूप से ध्यान में रखकर ली जाएगी। स्नातक बी.एस.सी. या स्नातक उपाधि में 50% अंक प्राप्त ही आवेदन करें।

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(2) **व्यायाम विशारद (बी.पी.एड.):** सादरा में कक्षा 12 की परीक्षा में उत्तीर्ण विद्यार्थियों के लिए यू.जी.सी. सूचित पूरे तीन वर्ष के और खेल-कूद तालीम के (बेचलर ऑफ फिजीकल एज्युकेशन एण्ड हेल्थ) अभ्यासक्रम में छात्रनिवास जीवन अनिवार्य है।

(3) **ग्राम व्यवस्थापन (रूरल मैनेजमेंट)** का पारंगत (एम.आर.एस.) कक्षा का दो वर्षीय अभ्यासक्रम: सादरा गाँव के पंचायती राज तालीम केन्द्र में। छात्र निवास जीवन अनिवार्य है। जो द्वितीय वर्ग बी.ए.बी.काम. या बी.एस.सी. की उपाधि प्राप्त हो, वहाँ प्रवेश के योग्य हैं।

(4) **गृहविज्ञान पारंगत (एम.ए.)** अथवा (एम.एस.सी. होमसायन्स) पूरे समय का दो वर्षीय अभ्यासक्रम: जो गृहविज्ञान विषय के साथ स्नातक उपाधि अथवा समकक्ष उपाधि प्राप्त हो, उनके लिए रांधेजा गाँव में इस अभ्यासक्रम की व्यवस्था है। सभी अभ्यासक्रमों को प्रवेश परीक्षा के लिए: (1) गांधीजी का जीवन उनके ही शब्दों में (2) समूहजीवन का आचार — बबलभाई मेहता (3) शिक्षा के जरिये क्रांति (संक्षिप्त में) (4) शिक्षण और संस्कृति — रविशंकर महाराज 1 ये पुस्तकें प्रत्येक आवेदक को, आवेदनपत्र के साथ उनकी कीमत वसूल करके भेजी जाएगी। प्रवेश परीक्षा में दो घंटे के 200 अंकों के दो प्रश्नपत्र रहेंगे। इसमें विद्यापीठ के ध्येयों, गांधीजीवन और उनके विचारों के उपरान्त अभ्यासक्रम के प्रस्तुत विषय की मूलभूत जानकारी और समूहजीवन की आवश्यकताओं आदि विषयों का समावेश होगा। दोनों प्रश्नपत्रों में हेतुलक्षी संक्षिप्त प्रश्न पूछे जायेंगे, जिसका मूल्यांकन कम्प्यूटर की सहायता से होगा। प्रवेश परीक्षा में सामान्य रूप से कुल 55% गुण प्राप्त करना आवश्यक है। 1993 जून से प्रारंभ होनेवाले शिक्षण विशारद को छोड़कर सभी अभ्यासक्रमों के लिए प्रवेश परीक्षा दिनांक 1 मई शनिवार, सुबह 11-00 से 2-00 और दोपहर 3-00 से 6-00 तक अहमदाबाद, सादरा या रांधेजा की प्रस्तुत संस्थाओं में ली जायगी। संबंधित परीक्षा के परिणाम आने से पूर्व इस कसौटी में जो उम्मीदवार उत्तीर्ण होंगे उन्हें भी इस परिणाम को देखते हुए रूबरू साक्षात्कार में बुलाया जायेगा और उनका चयन होने पर कामचलाऊ (हंगामी) रूप में प्रवेश दिया जाएगा। जिनका परिणाम 50% से कम होगा उनका प्रवेश रद्द किया जाएगा। सभी कक्षाओं के अभ्यासक्रमों के दौरान प्रमाणित खादी की पोशाक पहनना, प्रार्थना और समूह कताई में नियमित और समयानुसार भाग लेना तथा गांधी विचार की परंपराओं के अनुसार जीवन व्यवस्था के सभी कार्यक्रमों में नियमित उपस्थित रहना अनिवार्य है। अन्य विश्वविद्यालयों की तुलना में वेकेशन और छुट्टियों के दिन बहुत कम रहेंगे और एक सत्र में किसी भी कारण से 10 दिन से अधिक अनुपस्थित रहनेवाले का सत्र मंजूर नहीं हो सकेगा। एक वर्ष में किसी परीक्षा या उसकी पूर्व तैयारी के दिनों को छोड़कर शिक्षा के दिनों की उपस्थिति 200 दिन होने पर ही सत्र मंजूर हो सकेगा। प्रत्येक अभ्यासक्रम के लिए 25 या 50% लॉन और 25 या 50% सहायता की मर्यादित संख्या में शिष्यवृत्तियाँ उपलब्ध हैं। अहमदाबाद के अभ्यासक्रमों में प्रवेश लेने के लिए महादेव देसाई समाजसेवा महाविद्यालय, अहमदाबाद-380014 को 21-00 रुपए भेजकर आवेदनपत्र माँगाकर, भरकर दिनांक: 31-3-93 तक भेजा जाय। रांधेजा (जि. गांधीनगर) और सादरा के (जि. अहमदाबाद) अभ्यासक्रमों में प्रवेश लेने के लिए वहाँ के महादेव देसाई ग्रामसेवा महाविद्यालय से आवेदन माँगाकर भरकर दिनांक 1-4-1993 तक भेजा जाए।

दिनांक: 15-1-93

विनोद त्रिपाठी
कुलसचिव

“जनसमूह की निरक्षरता, यह हिन्दुस्तान के लिए पाप है, धर्म है”

— महात्मा गांधी

आगामी छुट्टियों का सदुपयोग करके प्रत्येक शिक्षित पाँच निरक्षरों को पढ़ाए।

CLASSIFIED ADVERTISEMENTS

S. N. M. Training College Moothakunnam P.O.

WANTED

I. S.N.M. Training College, Moothakunnam, P.O. Moothakunnam, Pin. 683516

- 1) Lecturer in Physical Science
(Substantive vacancy)
- 2) Lecturer in Natural Science
(Substantive vacancy)

Fifty percent Community Quota. Age and qualifications as prescribed by Mahatma Gandhi University and U.G.C.

II. S.N.M. College, Maliankara, P.O. Maliankara, Vazhappally, Pin. 683516.

- 1) Librarian Grade IV.

Subject to sanction by Director of Collegiate Education, Thiruvananthapuram.

- 2) Last Grade staff.

Age and qualifications as prescribed by Mahatma Gandhi University. Application form can be had from the Principals of respective colleges on payment of Rs. 20/- or Rs. 21/- by M.O. for Lecturer post and Rs. 10/- or Rs. 11/- for Last Grade Staff and Librarian. Apply within one month from the date of notification.

MANAGER

BHAVNAGAR UNIVERSITY

NOTIFICATION NO. 1/93

Applications are invited for the following posts in the prescribed forms which can be obtained from the University Office by sending (Non-refundable) fees of Rs. 25/- (rupees twenty five only) for the general category and Rs. 12.50 (rupees twelve and paise fifty only) for the SC/ST candidates, by Crossed Demand Draft in favour of "Registrar, Bhavnagar University, Bhavnagar" or by depositing cash during office hours i.e. from 11-00 a.m. to 2-00 p.m. on working days. Application with full details and enclosures should reach the undersigned on or before 26-3-93.

Sr. No. Name of the post and No. of Posts

1. Professor in Commerce - 1
2. Professor in Economics - 1
3. Reader in Chemistry - 1
4. Reader in Commerce - 1
- Lecturer (For P.G. Deptts.)
5. Lecturer in Commerce - 1
6. Lecturer in Economics - 1
7. Lecturer in Education - 1
8. Lecturer in Statistics - 1
- Posts for Samaldas Arts College
9. Lecturer in Sanskrit - 2
10. Lecturer in Statistics - 1
11. Lecturer in Economics - 1
- Posts for Sir P.P. Inst. of Science
12. Lecturer in Chemistry - 4
- (Two Posts Permanent - Two posts temporary)
13. Lecturer in Microbiology - 1
14. Lecturer in Botany - 3
15. Lecturer in Zoology - 1
- Posts for M.J. College of Comm.
16. Lecturer in Economics - 1
17. Lecturer in Banking - 1
18. Lecturer in Statistics - 1
19. Lecturer in English - 1

1. QUALIFICATIONS :

As per U.G.C. norms. Details will be provided with the application form.

2. Pay-Scales : Professor :- Rs. 4500-7300 Reader :- Rs. 3700-5700 Lecturer :- Rs. 2200-4000

3. For the posts at Sr. No. 1, 4 & 5, the preference will be given to the candidates having specialisation in Marketing/Finance/Personnel Management/Banking/Industrial Economics.

4. Reservations : First Preference will be given to the SC/ST candidates for Sr. No. 1 to 4.

The posts at Sr. No. 5, 6, 8, 9 (one post) 11, 12 (two posts - one temporary and one permanent) 14, (one post) and 18 are reserved for ST candidates, the posts at Sr. No. 14 (one post) and 16 are reserved for SC candidates, the posts at Sr. No. 7, 10 and 15 and reserved for SEBC candidates.

REGISTRAR

No. 8/193-NE-II

Ministry of Home Affairs

NORTH EASTERN POLICE ACADEMY

Umsaw, Barapani - 793 123
MEGHALAYA

SUBJECT :- Appointment to the post of Assistant Director (Lecturer) in the North Eastern Police Academy, Ministry of Home Affairs, on transfer on deputation including short term contract/Re-employment.

Applications are invited for appointment by transfer on deputation including Short term contract for one post of Assistant Director (Lecturer), in the North Eastern Police Academy, Ministry of Home Affairs, Umsaw, Barapani, Shillong.

For Armed Forces Personnel, the appointment will be by transfer on deputation/re-employment.

ELIGIBILITY :

Officers working under Central/State Governments/ Recognised Universities/ Training Institutes recognised by Central/State Governments :

- (i) Holding analogous posts on regular basis

or

- (ii) with three years regular service in posts in the scale of Rs. 2,000-3,500/- or equivalent and possessing the following qualifications and experience :-

EDUCATIONAL QUALIFICATION & EXPERIENCE:

- (i) Post Graduate Degree in Sociology/Psychology/Socio - anthropology from a recognised University or equivalent.
- (ii) Research/Teaching experience in the relevant subject preferably relating to the North Eastern region of India.

Note 1: Qualifications are relaxable at the discretion of the UPSC in case of candidates otherwise well qualified.

Note 2: Qualifications regarding experience is/are relaxable at the discretion of the UPSC in the case of candidates belonging to Scheduled Castes/and Scheduled Tribes; if, at any stage of the Selection, the UPSC is of the opinion that sufficient number of candidates from other communities possessing requisite experience are not likely to be available to fill up the vacancies reserved for them.

PERIOD OF DEPUTATION : three years.

ARMED FORCES PERSONNEL who are due to retire or to be transferred to Reserve within a period of one year and having requisite qualification and experience prescribed shall also be considered. Such persons will be given deputation terms upto the date of which they are due to release from the Armed Forces, thereafter they may be continued on re-employment up to the age of super annuation with reference to civil posts.

The Post is in the scale of Rs. 2200-4000. The Pay and Allowances of the Officers selected on deputation will be governed in accordance with the provisions of Ministry of Personnel O.M. No. 2/12/87-Estt. Pay. II dated 29.4.1988 as amended from time to time. A training allowance is also admissible in accordance with the terms of Ministry of Personnel's O.M. No. 12017/2/86-Trg dated 9th July, 1992. Applications in the format given in Annexure may be sent through the present employer alongwith attested copies of Confidential Rolls to:

Director (Assam), Ministry of Home Affairs, Room No. 10, North Block, New Delhi- 110 001. by 20th April, 1993.

ANNEXURE

BIO DATA PROFORMA

1. Name and Address in Block letters
2. Date of Birth (in Christian era)

3. Date of retirement under Central/State Govt. rules.
4. Educational Qualifications.
5. Whether Educational and other qualifications required for the post are satisfied. (If any qualification has been treated as equivalent to the one prescribed in the rules, state the authority for the same).

Qualifications/ Experience required	Qualifications/ Experience possessed by the Officer.
---	---

Essential (1)

(2)

(3)

Desired (1)

(2)

6. Please state clearly whether in the light of entries made by you above, you meet the requirements of the post.

7. Details of Employment, in chronological order. Enclose a separate sheet, duly authenticated by your signature, if the space below is insufficient.

Office/ Instt./ Orgn.	Post held	From To	Scale of pay and basic pay	Nature of duties
-----------------------------	--------------	------------	----------------------------------	---------------------

8. a) Nature of present employment i.e.; adhoc or temporary or quasi permanent or permanent.

b) Name of the parent office/organisation to which you belong :

9. Additional details about present employment :

Please state whether working under

- a) Central Govt.
- b) State Govt.
- c) Autonomous Organisations.
- d) Government undertakings.
- e) Universities.

10. Are you in Revised Scale of Pay? If yes, give the date from which the revision took place and also indicate the pre-revised scale.

11. Total emoluments per month drawn :

12. Additional information, if any which you would like to mention in support of your suitability for the post. Enclose a separate sheet if the space is insufficient.

13. Whether belong to SC/ST.

14. Remarks.

Signature of the Candidate

Address :

Date

Counter signed:

(Employer).

**University of Agricultural Sciences
& Technology**

**Camp Office: Railway Road,
Jammu -180 004**

Advertisement No : 01 of 1993

Applications are invited on prescribed forms for the following posts :

- Director Resident Instruction-cum-Dean Postgraduate Studies (4500-7300) UGC Scale + Rs. 400/- Special Pay
- Director of Research (4500-7300) UGC Scale + Rs. 400/- Special Pay
- Director Extension Education (4500-7300) UGC Scale + Rs. 400/- Special Pay
- Associate Dean, Faculty of Agriculture (4500-7300) UGC Scale

Last date for receipt of applications is **31st March, 1993**. Further details may be had from the Office of Registrar, Sher-e- Kashmir University of Agricultural Sciences & Technology, Camp Office, Railway Road, Jammu - 180 004 or Main Campus, Shalimar, Post Box No. 262, Srinagar 191 121. Those seeking details by post, may please send self addressed and duly stamped envelope 10"x4".

H. M. Tahir

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**SALES EMPORIA
BAHAWALPUR HOUSE
BHAGWAN DAS ROAD
NEW DELHI-110001
TEL : 388507**

University News

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MONDAY, MARCH 1, 1993

Rs. 5.00

TIET Convocation

From L to R : Dr. S.R. Gowariker, Director, Thapar Institute of Engineering & Technology, Dr. G. Ram Reddy, Chairman UGC, who delivered the convocation address, Shri L.M. Thapar, President and Shri I.P. Anand, Chairman, Board of Governors of the Institute.



Recipients of degrees
at the convocation

SCHOOL OF CORRESPONDENCE COURSES

ANDHRA UNIVERSITY, WALTAIR

ADMISSION INTO B.A., B.COM. AND B.Sc. COURSES

SUPPLEMENTARY BATCH, 1992-93

The School of Correspondence Courses invites applications from the candidates residing in India for admission into B.A., B.Com. and B.Sc degree courses for the academic year 1992-93 as Supplementary Batch.

The 1st year University Examinations for these candidates will be held in September/October 1993 and 2nd and 3rd year examinations will be held with a gap of one year each, thereafter.

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2. B.Com (both English and Telugu media)
3. B.Sc. (English medium only)

ELIGIBILITY

- Intermediate/P.U.C or equivalent or pass in Entrance Examination conducted by this School.
- Intermediate/P.U.C. or equivalent or pass in Entrance Examination conducted by this School.
- Intermediate/P.U.C. or equivalent with Physical Sciences and Mathematics.

Applications will be issued from 15th February 1993. Filled-in applications should reach the undersigned on or before **17th March, 1993**.

Intending candidates may write to the undersigned by Designation for Application form and Prospectus by sending Rs. 20/- by Demand Draft, Money Order in favour of the Director, School of Correspondence Courses, Andhra University, Waltair-530 003. The candidates have to write their names, address and course for which they want the prospectus on the back of the D.D. or M.O. coupon whichever is applicable. The candidates may also remit cash at the CASH COUNTER of the School of Correspondence Courses, towards Application form and prospectus. Postal Orders and Cheques will not be accepted.

The prescribed application forms are also available at the following places on payment of Rs. 20/- through Demand Draft drawn in favour of the Director, School of Correspondence Courses, Andhra University, Waltair-530 003.

OTHER PLACES OF SALE OF APPLICATIONS :

(a) AT NEW DELHI :

- 1) Sales Counter, Association of Indian Universities, A.I.U. House, 16 Kotla Marg.
- 2) Sri Venkateswara College, Dhoola Khuan, New Delhi.

(b) STUDY CENTRES :

1) Government College, Srikakulam, 2) M.R.College, Vizianagaram, 3) Mrs. A.V.N. College, Visakhapatnam, 4) Government College, Rajahmundry, 5) P.R. Government College, Kakinada, 6) Sir C.R. Reddy College, Eluru, 7) S.R.R. & C.V.R. College, Vijayawada, 8) A.C. College, Guntur, 9) D.N.R. College, Bhimavaram, 10) A.B.M. College, Ongole, 11) Silver Jubilee College, Kurnool, 12) Indian Institute of Management and Commerce, Hyderabad, 13) A.M.A.L. College, Anakapalle, 14) R.S.R.K.R.R. College, Bobbili, 15) Noble College, Machilipatnam, 16) V.S.R. & N.V.R. College, Tenali, 17) Government Degree College, Narasannapeta, 18) S.G.S. College, Jaggaiahpet, 19) S.S. & N. College, Narasaraopet, 20) S.K.B.R. College, Amalapuram, 21) V.R.S. & Y.R.N College, Chirala, 22) V.V. & M. College, Ongole, 23) Sri Sarvodaya College, Nellore, 24) K.B.N. College, Vijayawada and 25) B.V.K. College, Visakhapatnam.

The School has no agents and takes no responsibility for prospectus issued and promises made for admission by any other institution.

WALTAIR,

PROF. V. ABRAHAM

DL 7-2-1993

DIRECTOR

N.B. : The Applicants should clearly mention in their requisition that they require "Admission Application Form for Supplementary Batch"

Special Note for Successful candidates in the B.A/B.Com. Entrance Examination of December, 1992.

Candidates who passed in the B.A./B.Com. Entrance Examination held in December 1992 need not apply for the admission application form and prospectus for admission into 1st year Degree Course. The School will arrange to send the admission application form and prospectus along with marks statement-cum-eligibility certificate to such candidates. They have to pay an amount of Rs. 20/- towards the cost of admission application form and prospectus along with the prescribed tuition fee at the time of admission. However, the duly filled-in admission application form along with the necessary enclosures including Demand Drafts/M.O. receipt towards prescribed fee should reach the School of Correspondence Courses on or before the prescribed last date.

UNIVERSITY NEWS

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No. 9

1993

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IN THIS ISSUE

Unaided Professional Colleges in India	1
Lala Lajpat Rai - A Votary of Secular Values in National Education	4
Examining Examinations College Education in Andhra Pradesh	7
Convocation	10
Thapar Institute of Engineering and Technology, Patiala	16
Campus News	
Foundation for R & D Funding	19
Coaching for Competitive Exams	20
Lohia and the Present Crisis	20
Agriculture	
Agroclimatology and Sustainable Agriculture	21
IARI Convocation	21
News from UGC	
Countrywide Classroom Programme	22
News from Abroad	
CSIC Chair in Indian Studies	23
North Zone Youth Festival	24
Book Review	26
Research in Progress	27
Theses of the Month	28
Advertisements	34

Opinions expressed in the articles are those of the contributors and do not necessarily reflect the policies of the Association.

Editor :
SUTINDER SINGH

Unaided Professional Colleges in India

An Identity Crisis

M. R. Kurup*

There has been a lot of criticism about unaided colleges in Maharashtra, as in other States. Public interest activists, newspapers, educationists and even judiciary have roundly criticized these institutions on one account or another. Yet, people who are intimately aware of the financial crunch, which the education sector is facing, and also those who have studied in some of these institutions, appear to have some sympathy for these institutions. To many, "capitation fee" is either an emotional or a legal issue, instead of looking at it largely as an 'educational' or 'socio-economic' issue. There is, therefore, a need for closely examining the matter in its totality in the public and academic interest and to identify what exactly is wrong and where. Since the ongoing debate is about the engineering and medical institutions, we shall limit our analysis to them.

Like many other state governments, the Maharashtra Government decided in 1983 to permit unaided colleges both in general and professional education. Prima facie, the decision to depart from government aided to privately funded institutions, was based on an empirical fact that the demand for professional courses had been growing at a rapid rate and that the government found it increasingly difficult to finance such an expansion from the Exchequer. The capital outlay for an average engineering college, excluding land, is estimated to be around Rs. 5 crores, if it were to fulfil the conditions of affiliation as laid down by the University and the AICTE. This is particularly so with respect to college buildings, workshops, laboratories, equipments, furniture and fixtures, staff quarters, hostels for boys and girls, etc. on a minimum scale, with a provision for expansion over a period of time. Considering the cost of land in major cities, such an institution would have to also make provision for an equal amount, if not more, for land. Hence, a large number of professional colleges came up in satellite towns or mofussil areas where land is cheaper and available. Upto this point, there is absolutely nothing wrong with the policy.

Buchanan's Principle

If we apply the famous Buchanan's principle of "With and Without", we would unequivocally find that the student community would be much better off with new institutions than without them. Prior to 1983, there were just two government funded institutions admitting about 1000 students for the First Year Engineering in different subjects under the University of Bombay. Today, there are as many as 18 institutions, admitting nearly 8000 students to the First Year courses. This is true of all universities in Maharashtra and by allowing the private sector, the government saves nearly Rs. 100 crores of expenditure and, therefore, taxes. A similar arithmetic will hold good for medical education.

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If these seats were not available, interested students would have gone to places where such institutions exist, or would have been forced to continue with general education against their will. In case any one wants to know the magnitude of frustration amongst the youth who could not secure a seat in a professional college, meet a group of First Year B.Sc students in a nearby college. It is well known that hardly anybody attends the lectures during the first few months of the new academic year as they would still be running around for admission to a professional course. For instance, out of 217 students who had actually taken admission for F.Y.B.Sc., in V.G. Vaze College, Mulund, during this year, as many as 110 have already cancelled it (and many more are waiting on the wings to do so) as on 30th September, having obtained admission in professional courses. A measure of demand can also be seen, once again from Vaze College, where out of 485 students who passed the HSC Science examination in June 1992, as many as 450 have left to take up one or the other professional course! This is true of all major colleges in Bombay. What would have happened to them had there been only a handful of aided engineering and medical colleges? More and more institutions imparting professional training are inevitable with growth of the economy and the middle class. The policy of caste based reservation has also been playing an important role in determining the demand for professional courses.

What Went Wrong?

What went wrong in Maharashtra, however, is that adequate thinking had not gone into the government decision during 1983 or even thereafter, both at the government and the university level; nor had there been effective follow up, once the institutions were set up, which enabled the management of some of the institutions to indulge in exploitation. The authorities failed to correctly realize the ramifications of privately funded institutions, and erroneously equated them with public-funded institutions.

A few issues could have been anticipated. Apart from the cost of infrastructure, what would be the deficit per student on revenue account for medical and engineering education? While the government is able to meet the deficit of the government managed and aided colleges by way of taxes on the general public, the private sector was not left with an access to any "ways and means" to meet its deficit, particularly when capitation fees and donations against admission have been banned, at least on paper. A professional college cannot be started by a group of socially conscious middle class people like starting a Commerce College, where the deficit per student may not be more than a few hundred rupees. Also, the criteria for admission to these courses could have been clearly spelled out. In the absence of a set of transparent guidelines, the private professional colleges provided an excellent op-

portunity for trading in unaccounted money. For some of the managements, it also gave a golden chance to mobilize and divert zero-cost working capital for their business enterprises.

Not all managements of private colleges can be bracketed as ruthless education-barons. Some of them have really created or are in the process of creating good educational infrastructure and their academic standard, as measured by the performance of the students at the university examinations, is quite good.

Unaided colleges represent an important departure from the traditionally accepted mode of the society bearing the cost of education. The society at large is justified in financing the primary-secondary education as the social benefit of this sector is very high. When one moves up from primary to collegiate, particularly the professional courses, the proportion of social-welfare content is progressively replaced by private benefit, which the society need not finance except for the weaker sections. A modified 'benefit-approach' of pricing social infrastructure is greatly appropriate here.

It is therefore time to re-examine the whole issues afresh. The government of Maharashtra has appointed a committee under the chairmanship of D.M. Sukthankar, an eminent administrator who was a former Education as well as Chief Secretary to the government, to examine various aspects of the working of these colleges. It is indeed an opportunity to examine the whole issue comprehensively in the interest of student community in particular and professional education in general.

Whatever be the nature of the institution, it is crucial to have an efficient and qualified faculty and adequate infrastructure to meet the challenges of higher education. There will never be a dearth of students, willing to pay large sums of money for admission, irrespective of academic standing of the institution. No one will even bother to find out whether the college is recognized by the MCI or AICTE or not.

It is equally important to realize that without substantial finance, creation of sound education infrastructure is just not possible. Then there is need for a regular source of income for meeting the working capital, such as salary and non-salary expenditures as prescribed by the university from time to time. The fundamental question that the critics failed to answer was that so long as these institutions cannot be run on a "no profit no loss" basis with resources from within, who will fund them, why and how? It is not our intention to justify the unethical practices followed by some of the unaided colleges. Exploitative and corrupt practices anywhere deserve to be roundly condemned and unaided colleges are no exception. Having broadly identified the issues, it is time to suggest a few remedial measures for consideration.

Remedial Measures

The government managed and aided colleges may largely cater to the socially and economically weaker sections. In addition, a certain percentage of seats, say 15, in unaided colleges may be reserved for the socio-economically weaker sections, subject to a minimum percentage of marks (say 10 percent less than the merit cut off). Their fees may be subsidized by the government at par with aided institutions.

For generating internal resources, it is pragmatic to reserve 15 percent of the seats for the management for admission against subscription to the College Development Fund against proper receipt, which shall be utilized exclusively for meeting genuine financial and capital needs of the institution. An alternative to the contribution to the Development Fund is that they may be charged a higher fees as applicable to inter-state students, as at present. The differential fees may then be credited to the Development Fund. Here again, the cut off marks shall not be less than 10% of the general merit admission.

Out of the remaining seats, 90 percent may be filled in by students passing out from colleges in Maharashtra and 10 percent from outside the state purely on merit and at differentiated fees.

Once the criteria are laid down, the admission procedure at the institutional level should be transparent. One can also think of a common admission for all private unaided colleges in the state on the basis of a weighted merit-cum-choice index. This will also put an end to the flight of students from one institution to another. An institutionwise final list of students admitted may be published alongwith marks and other specifications like caste, etc. for the information of the general public, latest by 15th October every year.

It is also necessary to formulate proper and just rules and regulations regarding refund of fees, deposits and contributions to the Development Fund in case of cancellation of admission.

The Director of Technical/Medical Education should have a special cell under a Deputy Director to deal specifically with unaided institutions. The government may also nominate a representative on the board of management of these professional colleges, for supervision of academic performance and need based development of infrastructure. He will also be reporting and accountable to the government bodies regarding the functioning of the institution.

The government may give a lumpsum grant to the tune of 15 percent of per capita revenue cost of a general category student, to compensate for the social welfare component of education and the rest be charged to the student.

The teaching and non-teaching staff shall be appointed as per norms and salary paid through bank and appropriate provision made for service benefits like PF-Pension, etc.

In place of the defunct College Development Council, an active College Inspection and Development Authority be created with a full-fledged Director and adequate staff, at the university level, to monitor the fulfilment of affiliation conditions from time to time and for reporting to the university.

Let me conclude by drawing a parallel. The other day, a gentleman from the industry visited me for canvassing admission to a one-year Master of Computer Science (MCS) programme, of which six months will be in India and the remaining six months in one of the American universities. The fees for the course work to be Rs. 30,000 for the Indian segment and Rs. 4,00,000 for the half-year American segment! I have not heard anybody grumbling about the programme, as the whole package is looked at as a "business" proposition, and the promoters are well known private "entrepreneurs". The problem with an unaided professional "college" is that it is viewed as an "educational" institution and not as "business" organization. Even the promoters want the community to treat it as a purely educational institution. Thus, the crux of the problems lies in this 'identity crisis'. For an average Indian, education is still "charitable", and it is time to realize that not all education, particularly professional, need be charitable, and paid for through the Fisc.

SCHOOL OF PLANNING AND ARCHITECTURE NEW DELHI-110 002 (DEEMED UNIVERSITY)

ELEVENTH CONVOCATION

The Eleventh Convocation of the School of Planning and Architecture will be held on Wednesday, 10th March, 1993, at 4.00 p.m., at the Architecture Campus of the School.

Students eligible to receive degrees are requested to contact the respective departments.

V.P. Raori
DIRECTOR

Lala Lajpat Rai

A Votary of Secular Values in National Education

Man Mohan Lal*

Lajpat Rai is generally regarded as a freedom fighter of the top rank; his political views won acclamation of the nation and the world as well. What remained less known was his views on education. He was an active and enthusiastic educationist with his firm faith in nationalism as well as secular and scientific values which, he believed, formed the core of learning. In his opinion education could be neither communal nor chauvinistic. Study of international educational institutions, ideals and methods had been one of the passions of his life. His interest in western systems of education grew always in the perspective of the problems of Indian education. Mr. Rai had travelled far and had gathered considerable information about the problems of education European and American countries were facing in the beginning of the twentieth century. In these countries he had devoted a substantial part of his time and energy to the study of educational questions, always with a view to their adaptation to the needs of India.

The post-mutiny period of India may be regarded as the renaissance of learning and academic progress. This is the age when Swami Dayanand established the Arya Samaj which resumed, on the one hand, the *Gurukula* tradition of the old Indian educational system and, on the other, founded the Anglo-Vedic Colleges with a view to giving modern educational training to the Indians. The Theosophical Society headed by Mrs Annie Besant was no less sanguine about a uniform national system of education. Sir Syed Ahmed Khan realized his dreams of progressive Muslim nationalism by establishing the Mohammedan Anglo-Oriental College at Aligarh. He believed that the college would be able to impart a nationalistic vision of India to Muslim students so that they might find definite aim of life. The Central Hindu College at Varanasi owed its origin to this very age. With the establishment of these colleges, the idea of national education started gathering momentum. Although these institutions represented some specific communities of Indian people, yet in their relation to the British rule, they formed altogether a national representation. Their educational ideas were relative to the British system of education propounded by T.B. Macaulay.

Lajpat Rai was fully alive to this educational situation. 'It is quite true,' he said, 'that I am one of those persons who raised the cry of "national education" in

North India, so far back as 1883, and I have since then used it rather effectively for enlisting sympathy and collecting funds for the various institutions that were from time to time started to impart education on "nationalist lines" (Rai 1974:1). In the age of Rai national education aimed at freeing itself from the then governmental dominance. It was surely a step towards nationalism if an educational institution abstained from the government patronage and help. The British Government, as it seemed to the nationalists, represented anti-national power and therefore the *swadeshi* colleges, howsoever sectarian their founders might be, were considered ideal institutions. It is interesting to note that the term 'national' has undergone a change since Rai's time. The word 'national', in modern sense stands for something that belongs to India as a nation; it excludes all sectarian, communal and linguistic narrowness. Now the question is how far the old connotation of the word is acceptable in modern situation. From a broader viewpoint the nuances of the term 'national' may still be relevant. Rai seems to have agreed with Besant, though not without reservations. Mrs Besant's rhetoric sentimentality, in this connection may sound very appealing even today :

National education must meet the national temperament at every point, and develop the national character. India is not to become a lesser – nor even a greater – England, but to evolve into a mightier India. British ideals are good for India, we do not want echoes, nor monotones, we want a choral melody of nations, mirroring the varied qualities of Nature and of God. Shall Nature show but a single colour, and trees, and flowers, and mountains, and sky wear but a single hue? Harmonious variety and not monotony is the mark of perfection.

(Quoted by Rai 7)

Rai knew well that the national mind was then in a fluid condition and, as such, needed wise and thoughtful guidance. He did reiterate the ancient motto of education – *sa vidya ya vimuktaye* but with his own interpretation. He believed the salvation lay in freedom from misery, poverty, disease, ignorance and slavery of every kind, "in this life, now and here for ourselves and hereafter for our successors." (Rai 9) He was against the religions that enjoined on their followers the duty of suffering all the pangs of misery, poverty, disease, ignorance and slavery, in order to have the certainty of bliss and happiness in the life to come.

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Secular Values of Education

Lajpat Rai believed in balanced action; he hated dealing in high sounding words of philosophy and spiritualism. He was in favour of careful and critical consideration, as well as broad and thoughtful planning. Spiritual heights were not the ideals of his educational philosophy. In his opinion, negation of practical aspects of life, which is characteristic of all important religions of the world, cannot become the goal of education. He criticized Hinduism, Mohammedanism and Christianity from this very point of view. He believed that knowledge was universal and non-sectarian and therefore its pursuit was not possible along dogmatic lines of faiths and religions. As such, he laid emphasis on the secular aspect of education. He welcomed the *present* awakening in education and attributed it to researches and experiments carried out in Europe and America. He observed that education in these continents was getting more and more secular : "Sometimes I feel thankful for its very godlessness." Rai expressed his opinion without demur that the first need of India was the absolute destruction of the tendency towards the negation of life :

It is the fundamental basis of our whole national weakness.... The most important work before us then is to change the general psychology of people in this respect, to create in them an interest, a zest for real life. (Rai 1)

Perhaps this interest in life and abstinence from spiritual values have, at their root level, national obligations which seemed to be more demanding in an age when all patriots were looking forward to making a new nation full of prosperity and material wealth. Religious complacency was contrary to any such progress. There is no denying the fact that Lajpat Rai had not by then experienced anything like fanaticism or chauvinism or terrorism that was to shake the peace loving people to their roots afterwards. This three headed dragon was never so fierce and uncontrollable as it is in the last decade of the twentieth century. He could never foresee such hideous communalism. He wanted to modernize education in India. He realized the futility of sticking to the past. His suggestion to renovate education according to the modern needs is no less valuable today :

The attempt to live in the past is not only futile but even foolish; what we need to take care of is the future. If India of the future is to live a full, healthy and vigorous life commensurate with the importance which belongs to it by virtue of its human and other resources, it must come into closer touch with the rest of the world. If it is to occupy its rightful place among the nations of the globe, it must make the most effective use of its intellectual, mental and general human potentialities. (Rai 12)

The Language Question

The language issue attracted special attention of Rai. In his view it was useless to continue ancient languages that were no more in use. He admitted that Sanskrit was a rich language and the literature it revealed was also superb; nevertheless, any attempt to make it a medium of general education and uplift was bound to fail and deserved to fail. He did not see a great difference between Sanskrit and Latin: both were obsolete. Their use was confined only to scholastic pursuits. Rai believed in the integrated culture of the world. What Aryans had initiated in human knowledge was further advanced by the succeeding generations of the world. The process of advancement had not ceased. There was nothing national or foreign in human knowledge. That took place in any country of the world became universal. Therefore there must not be any hesitation in borrowing or adopting ideas from foreign languages. A book dealing with sciences, Rai observed, became almost out of date within a year, unless new edition was produced with upto date improvements. "No one who does not want to fall behind others can afford to neglect these sciences, which can only be studied effectively for at least a number of years in these foreign languages." (Rai 13)

Apart from the scholastic and academic values, the most important aspect of foreign languages is their indispensability in international trade and diplomatic relations. Lajpat Rai was well aware of this aspect too. In this perspective he did not regard the learning of foreign languages as something optional. He visualized economic independence of India with the help of linguistic ability :

If India's trade and commerce are to be carried on by Indians and not by foreigners, and if the Indian people are to profit therefrom, it is necessary that our traders and commercial men should know as many modern languages as may be possible for them to acquire first in school and then out of it. The bulk of the nation must be engaged in agriculture, or manufacture, or business. For all these purposes a knowledge of the modern languages is almost a necessity. (Rai 14)

Although Rai was against devoting time to ancient languages of India, he was a great votary of modern Indian languages. According to him the study of foreign languages must be accompanied by a good knowledge of the modern languages of India. But at the same time he believed that provincial languages must not be made the medium of instruction. Perhaps he wanted to discourage linguistic regionalism and his conception about this threat to our national unity was clear enough : "It will be disastrous to our national unity to insist that education be imparted through local dialects. Nowhere in the world is that done, and we should look with suspicion at this suggestion from whatever quarter it

may come." (Rai 77). It was his firm belief that a national language of India was a must in order to keep the nation intact. Though in his opinion English should be compulsory in the second half of the elementary school period, he believed English to be a great hindrance in the speedy dissemination of knowledge. English, he said, should be compulsory only as a language and not as a medium of instruction.

Nationalism through Education

It seems a paradox that on the one hand Rai regarded education and knowledge as universal and secular, he looked forward, on the other, to inculcating patriotism and national values through education. But his logic behind this hope was quite convincing. First he rejected the negation of life which is the ostensible goal of every religion. He could not share the age-old purpose of knowledge i.e. *mukti*, or salvation. The real salvation, he believed, lay in freedom from misery, poverty, disease, ignorance and slavery of every kind, in this life, now here for ourselves and hereafter for our successors. One may hesitate to give a materialistic purpose to education but Lajpat Rai was too honest and unassuming to give it any transcendental quality. If education fulfilled only the social and national demands, it was successful and need not go any further. Nationalism is a means of better life and happy society. Love for the nation not only ennoble us but also gives us a stimulus to action. Therefore Rai favoured inclusion of the active teaching of "patriotism" and "nationalism" as a regular subject of study.

Patriotism has been praised and criticized at the same time by politicians, moralists and anarchists. Political thinkers have warned frequently against the degeneration of patriotism into chauvinism. Since the beginning of the twentieth century patriotism has become a part of European education. Although the lessons teaching love of country were introduced in schools by Napoleon in the Post-Revolution France, patriotism has not yet been recognized as a subject. At the higher levels it has been criticized and discarded by Cosmopolitans like Bertrand Russell, E.M. Foster, and Tolstoy. These thinkers had already observed the terrible results of chauvinism and therefore they opposed any indoctrination of students' mind in the name of patriotism. Lajpat Rai was well aware of the extremities of nationalism, however he looked forward to a judicious and modest degree of patriotism in the future citizens of India. His philosophy of nationalism was formed in the specific perspective of India. He had foreseen the divisive forces that could render independence of India meaningless. These forces could be suppressed only by a positive force i.e. nationalism. He wanted to inculcate in the Indian students a feeling of fraternity and a spirit of loyalty to the geographical identity which history had given them. Rai's definition of 'nation' was purely geographical rather than political, racial or religious :

Every Indian child should be taught in so many words that every human being who is born in

India, or of Indian parents, or who has made India his or her home, is a compatriot, a brother or a sister, regardless of colour, creed, caste or vocation. The diversity of race, religion and language is often exploited by the foreigner as a pretext to deny us the status and the privileges of a nation. (Rai 59)

Perhaps Lajpat Rai agreed with John Dewey who allowed only a positive dose of nationalism to students: "The emphasis must be put upon whatever binds people together in cooperative human pursuits and results, apart from geographical limitations" (Dewey 1966: 98). Rai's nationalism was just different from the one Bertrand Russell attacked in vituperative terms. The nationalism Russell referred to was negative and based on the notion that the interests of one's country were naturally opposed to those of foreign countries: "boys and girls... are informed of the misdeeds of foreign States, but not of the misdeeds of their own State" (Russell 1980: 87). Never was Rai a supporter of aggressive patriotism; he was against spreading hatred among nations. He rather repudiated the German theory of the supremacy of the State over the nation (63). If his theory of nationalism was negative, it was only against the threats posed by internal disuniting forces like regionalism, communalism, language politics, and racialism. Rai respected all nations of the world. He welcomed ideas and virtues from whatever corner they came. Despite being a staunch supporter of patriotism in education, he was a great cosmopolitan and advocated the unity of the world. He looked forward to the oneness of humanity and the probability of world unity and a world culture (31). Therefore we should not misunderstand his idea of nationalism which was nothing more than a feeling that all Indians belonged to one common nation, one common heritage irrespective of the differences of language, religion and province. His advice to the future educationists is worth attention today when communal forces are bent upon distorting the facts of history to their specific motives. He laid emphasis on the "teaching of Hindu-Mohammedan unity which can be greatly facilitated by the writing of special and carefully worded theses on the lines of our national heroes. Lives of Shivaji, Partap and Govind Singh, as well as those of Akbar, Shershah and Shah-jahan must be carefully written. They should contain no untruths; they should be scrupulously true, but written from a broad, patriotic and national point of view. They should be a composite production of patriotic and scientific history" (62).

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Examining Examinations

A Case Study of the University of Delhi

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Any system of examination is good provided it is properly conducted and efficiently administered. As far as the University of Delhi is concerned, I would classify the system into the following four broad areas :

- a) *Preparation for Examinations* includes appointment of examiners, setting of question papers, their printing and moderation, supply of question papers at the examination centers.
- b) *Conduct of examinations* at examination centres which includes listing of candidates, distribution of candidates among examination centres, use of unfair means, mass copying, etc.
- c) *Secrecy work* of assigning fictitious roll numbers to scripts, evaluation of scripts, tabulation, moderation and publication of results and supply of statements of marks.
- d) *Miscellaneous* – evaluation of Ph.D. Theses, payment of remuneration to examiners, revaluation.

I have attempted to discuss each of the first three areas under the following three sub-heads :

- i) Undergraduate Courses – B.A. (Pass), B.Com. (Pass), B.Sc. (General) and subsidiaries.
- ii) Honours Courses.
- iii) Postgraduate Courses – M.A., M.Sc. and M.Com.

Professional courses like LL.B, M.B.A., Medical Sciences, etc. have not been touched on the assumption that each professional course has its own norms and requirements. But in general, I would suggest for consideration that the entire work of administering examinations for these courses be completely decentralised, especially in view of the fact that each such Faculty has been provided with the services of an Officer of the rank of Deputy Registrar/Assistant Registrar to assist the Dean of the Faculty/Head of the Deptt. If at all necessary, assistance of the Controller of Exams could be obtained for printing of question papers only.

(a) Preparation for Examinations

(i) Undergraduate Courses

The question papers for undergraduate courses are set by Boards of Paper Setters and the same are not

moderated. For B.A. (Pass) and B.Com. (Pass) many question papers are set for each paper to be used as per requirement of the date-sheet, and separately for Correspondence Courses students, etc. to be examined in Delhi, outside Delhi (in India) and abroad. The final selection of a question paper to be used for any day and for any category is left to the Controller of Examinations. However, this is not being done for the B.Sc. (General) or Subsidiary for B. Sc. (Hons) Examinations. In the case of B.Sc. (General), the suggestion being made under (ii) below may be considered for adoption.

(ii) Honours Courses

For Honours Courses, generally only one question paper for each paper is being set, except for courses offered also by the School of Correspondence Courses where more than one question papers are set by individual paper setter and the question papers are moderated. In cases where one question paper per paper is set there have been allegations/rumours of leakage of question paper before examination and such insinuations are on the increase.

It is suggested that for each paper, not less than three question papers be set by a Board comprising not less than two persons. The final selection of the question paper to be used at the examination be left to the discretion of the Controller of Examinations. The question papers thus set be not moderated.

To avoid wastage, it could be considered whether the question papers not utilised could be entrusted to some publishers for printing and sale after the examination, to be treated as model question papers, for future years, and the University receiving part of the sale proceeds.

(iii) Postgraduate Courses

The present arrangement of setting question papers and their moderation for the postgraduate courses may continue, except in courses which are also offered at the South Campus. In papers which are offered at both the campuses, the same procedure as for setting the question paper for Honours courses as detailed in (ii) above may be followed with the condition that the Board of Paper Setters must include at least one teacher teaching the paper at each Campus.

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b) Conduct of Examinations

Undergraduate and Honours Courses

Generally candidates belonging to a college, both for undergraduate and Honours courses, are assigned their own college as centre of examination. No doubt, such an arrangement presents difficulties and problems of various types. But we have also tried, in the past, the system whereby students of a college are assigned an examination centre other than their own college. Such an arrangement presented greater difficulties than the ones faced now and had to be abandoned. The invigilation work being a part of the duty of the teacher, the teachers of a college cannot be sent to another college to invigilate. Therefore, we are left with the only choice of assigning students of a college, their own college, as centre of examination, and they are invigilated and supervised by their own teachers.

In order that the present arrangement works more efficiently, instead of the present practice of a sending a team of observers to various examination centres area-wise, we should have a panel of observers prepared in advance and the observers be sent in their individual capacity to act as observers on day-to-day basis and stay at the examination centre for full duration of examination. In the event of observing any violation of prescribed procedures in conducting the examination, they should bring the same to the notice of the Controller of Examinations, on a prescribed proforma. All such complaints be placed before a two-member committee of senior professors of the university for looking into and resolving the same.

Individual Copying – To arrest use of unfair means by individual students during examination, all candidates should be subjected to physical search before entering the examination hall. There should be at least two invigilators in a single room irrespective of the number of candidates. Invigilation should be effective. There should be an insurance coverage for the invigilators and the other staff engaged in the conduct of examinations, both for injuries and death. After these measures have been taken the punishment for resorting to unfair means should be made more stringent than at present.

Mass Copying – To eliminate mass copying at examination centres, particularly receiving help by examinees from outside agencies during examination hours, the present arrangement of posting police personnel at examination centres may continue. In addition, the A.C.P. of the area accompanied by a senior person not below the rank of a Reader or a Deputy Registrar may take a round of the area where examina-

tion centres are located. In the event of any police official found wanting in the discharge of his duty, departmental action may be taken against him on a report to be lodged jointly by the A.C.P. and the university official.

Postgraduate Courses

The present arrangement for the conduct of examinations at the postgraduate level may continue with the modification that the Roll No. Cards of the students belonging to the School of Correspondence Courses and the Non-Collegiate Women's Cell may also bear their photograph duly attested by the Head of the Unit in his own hand-writing, and not by using facsimile stamp.

(c) Secrecy Work

Undergraduate Courses

At present, the scripts of B.A. (Pass), B.Com. (Pass) and B.Sc. (General) examinations are not marked with fictitious roll numbers. The packets as received from the examination centres are addressed to the examiners with the result that it is very easy to know as to which script has gone to which examiner for valuation. Such an arrangement is also likely to create a bias in the mind of the examiner once he comes to know that the scripts being valued by him belong to the students of a particular college.

It is suggested that as in the case of Honours courses, the scripts of examinations of Pass courses may also be marked with fictitious roll numbers before being sent for evaluation. No doubt, this exercise involves tremendous work. But if our teachers can do this work on a much larger scale for another academic organisation in the city, it should not be difficult for them to do the same for their own university.

Honours & Postgraduate Courses

The present arrangement of marking scripts of Honours and postgraduate examinations with fictitious roll numbers before evaluation is working quite satisfactorily and the same may continue.

Central Evaluation Versus Home Evaluation

Some years back, we introduced the system of central evaluation for the Pass and Honours examinations. Among other things, it achieved the objective of expeditious publication of results with lesser number of discrepancies than before and the valued scripts being scored in an orderly manner to facilitate their future reference for evaluation, etc. It is not understood why this system was dispensed with. The matter needs to be re-examined. On balance the central evaluation has

more advantages and we should seriously consider re-introducing the same.

The evaluation of scripts of postgraduate examinations can also be done centrally in the department under the supervision of the Head of the Department himself or any other senior person so designated by the department.

Tabulation of Results

We should take the help of computers for all the examinations where the number of candidates involved is reasonably large. For other examinations, where the numbers involved are small, tabulators and scrutineers may be appointed, purely on merit, on the recommendation of the Controller of Examinations. The functions to be performed by the tabulators and scrutineers should be defined, demarcated and codified and the same should be followed and adhered to rigidly. There should be no overlapping of functions/responsibilities.

Similarly, the role of the office vis-a-vis tabulators and scrutineers particularly in the matter of final publication of results, should also be clearly defined and observed.

Moderation of Results

The moderation of results has to be more scientific and systematic. The scrutineers should place before the moderators full facts about the tabulated results viz. Pass percentage for the examination as a whole, subject-wise, paper-wise, examiner-wise, and the cases where performance of a candidate appears to be abnormal. The moderation committees should thoroughly probe into these facts and should not feel shy of resorting to revaluation of one or more scripts or the whole lot of scripts in case it is satisfied about the necessity of resorting to the same.

Quite often there has been delay in the supply of statements of marks to the students after publication of results. As far as possible, the statements of marks should be sent to the colleges/students simultaneously with the published results. However, in situations where it is not possible to do so, computerised lists indicating the detailed marks, prepared college-wise, may be supplied to colleges in respect of their students, to eliminate anxiety of students on this account.

Evaluation of Ph.D. Theses

Some years ago, time schedules were prescribed, for the committee of courses to meet after submission of thesis to recommend names of examiners, etc. for the

examiners to respond to the letter of appointment, period allowed for evaluation, etc. In case these time-schedules are strictly observed, there should be no difficulty in the timely publication of results of Ph.D. theses.

Revaluation

A suggestion to the effect that the revaluation may be done collectively by the teachers of the department on a specific day previously fixed is already on the university record and the same could be finalised and implemented to achieve expeditious results of revaluation.

The *modus operandi* of the suggestion is as follows : The office after sorting out the applications for revaluation should keep the scripts of a subject to be revalued ready by a particular date. Thereafter a group of teachers selected on the recommendation of the department may do the revaluation – first step and second step on one day in the university under the supervision of the Head of the Department or another senior person to be designated by the department. This would ensure random allotment of scripts for valuation as also the anonymity of the examiner doing revaluation work.

Payment of Remuneration to Examiners

There have been frequent complaints about delays in the payment of remuneration to examiners as also delays in making payment of examination centre bills so much so that in certain cases the examiners have insisted that they would not return current year's examination scripts unless their remuneration for the previous year is paid. This is unfortunate both for the university and the teachers taking such a posture.

To overcome this difficulty it is suggested that the part of the Finance Branch dealing with the work of making payments for examination work should be brought under the control of the Controller of Examinations and the Controller should be held responsible for such delays.

Ordinarily payments should be made as per norms laid down. However, in exceptional situations, the Controller of Examinations may be authorised to take decisions on the merits of each case. If in doing so, the financial implication involved is beyond a particular limit, he may consult the Finance Officer. In the event of difference of opinion between the Controller of Examination and the Finance Officer, the matter may be referred to the Vice-Chancellor whose decision should always be final.

College Education in Andhra Pradesh

S.P. Gupta*

P. Prakash*

Andhra was constituted a separate state in 1953, on its partition from Madras and consisted of the undisputed Telugu speaking areas. To this region was added in 1956, the Telangana area of the former Hyderabad State. Thus Andhra Pradesh now consists of the coastal belt (Andhra), Rayalseema and Telangana. The Nizam had set up the Osmania University as early as 1918 with Urdu as the medium of teaching. The British Government set up the Andhra University in 1926. After Independence was set up the Sri Venkateswara University in 1954. However, many colleges of Andhra State remained affiliated to the Madras University for a long time.

All the three aforesaid universities had the object to effect reorganisation of the system of education in the state so as to develop technical/technological education and research in applied sciences, in addition to promote Andhra arts and culture. When Andhra Pradesh State came into being, it had been one of the first states to introduce 10 + 2 + 3 pattern of education. The number of colleges increased by leaps and bounds to more than four hundred (including 54 Oriental Colleges). Also during the period 1947-1990 as many 13 universities including a central university were set up in the state of Andhra Pradesh. As per the UGC Act, three institutions in the state have been accorded the status of "Institution deemed to be a University" and under an Act of state legislature, the Nizam's Institute of Medical Sciences has been conferred the status of a university. The state has the distinction of having the first Open University, first Technological University and the first University of Health Sciences in the country. It is again the first state to establish a State Council of Higher Education.

Universities in Andhra Pradesh

University	Year of Establishment	No. of Colleges
1. Osmania University	1918	145
2. Andhra University	1926	114
3. Sri Venkateswara University	1954	69

4. Kakatiya University	1976	45
5. Nagarjuna University	1976	119
6. Sri Krishnadevaraya University	1981	25
7. Andhra Pradesh Agricultural University	1964	Non-affiliating
8. Jawaharlal Nehru Technological University	1972	"
9. Hyderabad University	1974	"
10. Open University	1982	"
11. Sri Padmavati Mahila Vishwa Vidyalyam	1983	"
12. Telugu University	1985	"
13. Andhra Pradesh University of Health Science.	1986	"

Development of Colleges

At the time of formation of the state, there were 90 colleges of which more than half were colleges of general education and the rest professional and technical ones. Over the period of time the number has increased manifold. Colleges offering courses in arts, science and commerce continue to dominate the educational scenario.

As the nucleus of what was destined to be a vast university, the University College, Hyderabad was inaugurated in 1919 with Maulana Habibur Rahman Khan Sherwani (later, Nawab Sadr Yar Jung) as the first Vice-Chancellor of Osmania University. The college had in the first year 225 students in the Intermediate Class and 25 teachers. To look after the moral and intellectual interests of students, tutors were appointed from among the members of staff. Collegiate education in the erstwhile Hyderabad State was limited to the Osmania University and the colleges in the "Suba" centres at Warangal, Gulbarga and Aurangabad. Only the children of Jagirdars and privileged classes residing in the immediate vicinity of these centres had access to higher education. The fortunate few could afford the

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luxury of sending their children to these centres of learning. Higher education thus remained an unfulfilled dream for the progeny of the common people, especially "the hewers of weed and drawers of water" in towns and villages criss-crossing the districts. With the dawn of Independence, the demand for education and the pressure of public opinion grew insistent. In the Hyderabad State the People's College of Arts and Science at Nanded was started under leadership of Swamy Ramanand Tirtha. In Telengana districts, Karimnagar displayed initiative in starting a drive for the establishment of a full-fledged College of Arts, Science and Commerce. Thus came into existence in 1956, the first affiliated college in Telangana district of Karimnagar. The college was named after deity of Vemulawada Sri Raja Rajeswara Swamy. On the same pattern colleges were established in other districts. Nagarjuna College at Nagonda, the College of Arts and Science at Siddipet, Girraj College at Nizamabad, S.R. and B.G.N.R. College at Khammam and the Science College at Adilabad thus came into existence.

As the popular demand for higher education gained momentum, more and more colleges were started throughout the state. Government College, Rajahmundry (estd. 1873), P.R. Govt. College, Kakinada (1884), Mrs A.V.N. College, Visakhapatnam (1879), M.R. College, Vizianagaram (1879), Govt. College of Education, Rajahmundry (1894), The Hindu College and Noble College, Masulipatnam, Sir C.R. Reddy College, Eluru, A.C. College and Hindu College, Guntur, S.S.B.N. College, Narasvopet, Govt. College Anamlapur, G.T. College, Madanpalle, S.V. Oriental College, Tirupati were the pioneer institutions of State that catered to women's education.

Women's Colleges

The Principal of the Nampally Girls High School, Hyderabad, Dr. Amina Pope, persuaded the university authorities and the government to approve higher education classes for women. Sir Akbar Hyderi and Sir Ross Masood, the DPI, lent their support. Accordingly, intermediate classes for women were first started in 1924, which were attached to Girls High School. At that time there were only 3 regular and 2 casual students. But this ultimately led to the establishment of a separate college. Science classes were added in 1932, with Urdu as the medium of instruction as in the whole Osmania University. The college (University College for Women) was handed over the palatial Hyderabad Residency by the government in 1949.

With the ever increasing demand for higher education for women, more and more colleges had to be set

up in course of time e.g. Ram Bahadur Venkata Rama Reddy College in 1954, St. Francis College in Secunderabad, Navjeevan College, Vanita Mahavidyalaya and the Nizamabad Women's College. When the state government instituted the scheme of free schooling for girls, there was a sudden spurt in the demand for women teachers. Several colleges came into being thereafter e.g. Govt. Women's College at Warangal and two private colleges for Women at Nizamabad and Khammam to name only a few.

Coordination

Admissions and appointments in colleges are generally governed by the rules laid down by the state governments. Coordination between colleges and the parent universities is done by the college development councils (CDCs). Each CDC coordinates with UGC and the State Council of Higher Education on matters concerning colleges in its university area. Andhra Pradesh State has the distinction of setting up the first State Council of Higher Education in the country viz. in the year 1988, in tune with the National Policy of Education (1986). It has been acting as a coordinating body with the varsities, state government, UGC, etc. Subject to satisfying the basic eligibility criteria of the university concerned, admission to undergraduate professional courses are made on the basis of merit at the state level common entrance tests conducted by the State Council of Higher Education for all the universities/institutes in the state. The State Council of Higher Education conducts State level common entrance tests for admission to the following courses in all universities of the state :

Engineering – BE./B.Tech./Agriculture (B.Ag)
Medicine (M.B.B.S.) – EAMCET.

B.Ed. – BEDCET

L.L.B./B.L. – LAW CET.

B.E./B.Tech. – Engineering entrance test for Diploma under ECET.

Bachelor of Physical Education – SPECET.

Admission to postgraduate courses (Non-professional and professional viz. M.Sc., M.A., M.Com., M.B.A., M.C.A., M.E. and M.Tech. etc.) are made as per merit at the qualifying examination/the entrance test conducted by the varsity/basis of performance in GATE.

The State Council endeavours alongwith other academic bodies to periodically review the course con-

tent and suggest modernisation of syllabi relevant to the changing societal needs and requirements. The council makes effort for maintenance of academic calendar in all the universities and colleges.

The curriculum of the first degree level provides an option for participation in NSS, NCC and sports and games. Students' attention is drawn in the aforesaid activities, by some incentives. Several colleges offer courses in some aspects of women studies.

Old Institutions

A brief account of old institutions as appears in the Madras University Centenary Vol. II.

Maharaja's Sanskrit College, Vizianagaram (1862)

The institution was founded by H.H. Sir Viziarama Gajapati Raja, M.C.S.I., Maharaja of Vizianagaram about the year 1862 and was approved by the Madras University in 1911 for the Siromani (Mimamsa and Sahitya) and Vidwan Courses. Further approval was accorded in 1920 for the teaching of Indian Philosophy and Indo-European Philology. With the passing of the Andhra University Act the institution came under the control of that University in 1926.

Mrs. A.V. Narasinga Rao College, Vizagapatam (1878)

This institution which was founded in 1860 by Sir Alexander Grant, Inspector of Schools, Mr. E. Fane, Collector of Vizagapatam, the Maharaja G.N. Gajapathi Rao and Mr. Chadika Venkateswara Naidu, was originally called 'The Anglo-Vernacular School', but when it was raised to the status of a second grade college and affiliated to the University in 1878, the name was changed to Hindu College. In 1892 the Late AV Narasinga Rao of Vizagapatam bequeathed a lakh of rupees, besides a Building Fund of Rs. 15,000/- for the college to be named 'The Mrs. A.V. Narasinga Rao College, Vizagapatam'.

Sri Venkateswara Sanskrit Vidyasala, Tirupati (1884)

This institution was founded in 1884 by the late Sree Mahant Bhagavan Dossjee Varu and was known the Grant Duff's Sanskrit College. The name was changed later to Sree Venkateswara Vidyasala and was maintained out of Tirumalai-Tirupati Devasthanam funds. It was placed on a permanent basis by an Act of Government in 1914 and was approved by the University in 1920 for Nyaya, Vyakarana, Sahitya and Vedanta of the Siromani Course. The college was under the Andhra University from 1926 and was later re-affiliated to the Madras University in July 1930 on account of an amendment to the Act. When the Sri Venkateswara University was started at Tirupati in 1954, this institution went

under the control of the Andhra University as provided in the Act.

American Evangelical Lutheran Mission College, Guntur (1885)

The American Evangelical Lutheran Mission opened an A.V. School in 1853, but closed the same for several years. The Mission re-opened the High School in 1874 and was affiliated to the University of Madras as a second grade college in 1885. It came under the jurisdiction of the Andhra University which was established in 1926. The B.A. class was opened the same year. The name of the College was changed to Andhra Christian College in 1928.

Madrasa Islamiah Arabic College, Kurnool (1887)

This was founded in 1887 by the local philanthropists for providing elementary education to the Muslim boys of the town. It was converted into an advanced Arabic Madrasa in 1893 through the efforts of the late Moulana Sultan Ahmad, Rawalpindi. The college was approved by the university in 1922 for the Munshi-i-Fazil Course. When the Andhra University was inaugurated in 1926, the institution was automatically transferred to that University; but was re-affiliated to the Madras University from 1930 by means of an amendment to the Act. With the inauguration of Sri Venkateswara University in 1954, the College got transferred to the S.V. University in that year.

American Baptist Mission College, Ongole (1893)

Mr. Loughridge of the Baptist Mission began a secondary school in Ongole in about 1875. It was developed to the rank of a Secondary Grade institution by 1890 and was taken over by Government in 1893. In 1894 it was affiliated to the University for L.T. Degree Course and was placed under the supervision of the Principal of the Local Arts College. The L.T. Classes were removed from Rajahmundry and amalgamated with the Teachers' College at Saidapet in July 1911. In 1916, the Government sanctioned the re-opening of the college at Rajahmundry and the new training college was opened in July 1917. The affiliation of the college was delayed by the university for want of buildings; but the university agreed to grant exemption for the students to appear for L.T. examinations till the requirements were fulfilled. The college came under the jurisdiction of the Andhra University in 1926.

Sanskrit College, Tenali (1911)

The college was established in 1911 by the public of Tenali including Messrs Pillutta Anjanaya Sastri (the then Dewan of Sanivarapeta Estate), M. Ragothamasastri and Chandiamouli Sastri and was approved by the

university in Vedanta Siromani and Vidwan (Sanskrit and Telugu) Courses in 1912. The institution came under the jurisdiction of the Andhra University when it was established in 1926.

Andhra Girvana Vidyalaya, Kovvur (1912)

The Andhra Girvana Vidyalaya was started in October, 1912 by Mr. Suryanarayana Rao, Pleader, Kovvur, with the object of resuscitating oriental culture and was placed under a Trust by the founder in 1914. It was approved by the university in 1920 to impart instruction in Vyakarana and Sahitya for the Siromani Course, and in Telugu and Sanskrit for the Vidwan Course. The institution came under the jurisdiction of Andhra University when it was established in 1926.

Ceded Districts College, Anantapur (1916)

After the passing of the Andhra University Act, the college became affiliated to that university in 1926. Consequent on the amendment to the Act in 1929 the college was re-affiliated to the Madras University in 1930. The college was granted further affiliation to the Madras university till the formation of the Andhra State when it was transferred to Andhra University in 1954.

Venkatagiri Rajah's College, Nellore (1920)

The institution was founded by the late Mr. Narayana-swami Chetti, B.A., Dewan of Vekatagiri, under the name of Hindu High School, in the year 1875. When it experienced financial stress, the late Maharaja of Venkatagiri came to its rescue with is munificence and since 1894 the institution had borne the name of its patron and progressed under his help. The School was raised to the status of a college qualified to give instruction in Groups, I, II and III of the Intermediate Course in 1920; but Group II was not opened for want of sufficient accommodation. It ceased to be affiliated to the Madras University when the Andhra University was established in 1926.

Medical College, Vizagapatam (1923)

The college was opened in July 1923 by the Government of Madras in response to the requests of the people of Telugu Districts, for providing facilities for study for the degree in Medicine. It was decided to utilise for the college the building originally built for a medical school, until suitable buildings could be erected. Affiliation was sanctioned in the first instance for the course of study for the first year of the M.B. & B.S. Course (Chemistry, Biology, Anatomy and Physiology). Further affiliation for the Second year of M.B.B.S. course was granted in 1925.

With the establishment of the Andhra University, the college was transferred to that University from 1926. At

present it is a fully developed Medical College with necessary buildings, laboratories and hospitals and it offers instruction for Postgraduate Courses for M.D., M.S., D.G.O., D.L.O., D.V., T.D.D., and Pharmacy Degrees, besides the M.B. & B.S.

Narasimha Sanskrit College, Chittigudue, Masulipatam (1923)

The institution was founded in July, 1923 by Sri S.T.G. Varadachari, M.A., in memory of his father, the late Sriman S.T.G. Narasimhacharyulu Guru, and was maintained out of the personal resources of the founder himself. It was affiliated to the University in 1923 for Siromani (Vyakarana), Vidwan (Sanskrit and Telugu) for the Proficiency Course in Comparative Philosophy. The college became affiliated to the Andhra University when it was established in 1926.

Sri Venkateswara College, Tirupati (1945)

This institution was founded by the Tirumalai-Tirupati Devasthanam Committee as a First Grade College and affiliated to the University of Madras. It started functioning in June 1945, as a temporary measure in the building of the Sanskrit College. The subjects in which affiliation was granted were Mathematics, Physics, Chemistry, Natural Science, History and Logic for the Intermediate fund for Mathematics, Philosophy and Economics for the B.A. degree course. The College ceased to be affiliated to the Madras University with the establishment of Sri Venkateswara University in 1954.

Engineering College, Anantapur (1946)

The idea of opening a new Engineering College in the Rayalseema was first envisaged in the Post-War Reconstruction Scheme and the government decided to open a college at Anantapur. For want of buildings, the college functioned at the Engineering College, Guindy, for two years as an affiliated college of the Madras University (July 1946 to April 1948) and moved to its premises in July 1948. This is a Government Institute.

Due to the formation of the Andhra State in October 1953, the institution was affiliated to Andhra University, and on the establishment of the Sri Venkateswara University, the college came under the control of that university from June 1954. Instruction was imparted in Civil, Mechanical and Electrical branches for the degree of Bachelor of Engineering.

Osmania College, Kurnool (1947)

This institution was established for the benefit of the people of Kurnool District in 1947 and was affiliated to the University of Madras as a First Grade College, with

effect from 1947-48 in the Intermediate, B.A. and B.O.I. Degree courses.

The college came under the jurisdiction of the Andhra University in 1954 consequent upon the establishment of the Sri Venkateswara University in that year by the Andhra State.

Government Arts College, Cuddapah (1948)

The college was started in July 1948 as a Second Grade College with History and Psychology under Part III of the Intermediate Course for the benefit of the citizens of Cuddapah.

The college was raised to the First Grade in 1951 with the affiliation in Group IV-b Economics and History. Teaching of Logic was taken up in July 1952.

Consequent on the passing of the Sri Venkateswara University Act in 1954, the college became affiliated to the S.V. University from July, 1954.

Government Training College, Kurnool (1952)

This institution was started in 1952 by Government for the benefit of the people of Kurnool District and was then affiliated to the University of Madras as qualified to prepare candidates for the B.T. Degree Course. It continued to be affiliated to the university till 1954, when the Sri Venkateswara University was established at Tirupati.

Sri Venkateswara College for Women, Tirupati (1952)

This institution was affiliated to the University of Madras with effect from the academic year 1952-53 as a Second Grade College to impart instruction for the Intermediate in Arts Course. It was managed by the Tirumalai Tirupati Devasthanam Committee. Consequent on the establishment of the Sri Venkateswara University in 1954, the College came under the jurisdiction of the Andhra University in that year.

Present Status

Though Andhra Pradesh is one of the educationally backward states, on an average the state has been adding 20 colleges per year. There is an uneven distribution of colleges in districts; the highest being 44 and lowest being 2 in the districts of Hyderabad and Ranga Reddy respectively. The minimum number of Government colleges in a district is 2 in Vizianagram and there is only one private college in each of the districts of Adilabad, Mahabubnagar and Srikakulam. The maximum number of Government Colleges is in Anantapur (12) and of private colleges in Hyderabad (39). The district of Ranga Reddy has no Government College

whereas Medak and Karimnagar have no private college.

Colleges in Andhra Pradesh present a wide diversity in their character in terms of facilities provided to students, quality of education imparted, infrastructure available for curricular, co-curricular and extra-curricular activities and their maintenance. Concomitant with traditional courses of sciences, arts, humanities, social sciences and languages, a special feature of college education in Andhra Pradesh is that there are varied courses leading to graduation viz. in Home Science, Nursing, Music, Dairy, Forestry, Homoeopathy, Ayurveda, Library Science, Journalism, Law, Oriental languages, Physical Education and Child Health. The Aurvedic and Homoeopathic Colleges are well facilitated with laboratories and attached hospitals. The Nature Cure Hospital in Hyderabad which therapies "Naturopathy" has a unique role in reviving the traditional methods of help keeping.

Considerable impetus has been given to higher education in the backward area of Rayalseema since the formation of A.P. in 1956. Owing to the liberal education policy adopted by the Andhra Pradesh Government on the one hand and the enthusiasm shown by the civic authorities and munificent educationists on the other, the number of colleges has grown steadily.

Even though many colleges have been set up, they are not adequately equipped to meet the educational needs of the students. A good number of colleges which were started in recent years are located in Junior College buildings, sometimes even in High School buildings without proper sites for the construction of colleges. In many cases the degree colleges work in shift with Junior Colleges so as to share the classrooms and laboratories. Some colleges were functioning in a kind of sheds. It impedes the possibilities of additional tutorial work, co-curricular and extra-curricular activities and physical education of the students.

Autonomous Colleges

Andhra Pradesh State has 23 autonomous colleges which fall under the jurisdiction of four universities (*See Annexure*). Eight of the autonomous colleges are exclusively for women. Nine out of ten autonomous colleges that fall under the purview of Osmania University are located in the twin cities of Hyderabad and Secunderbad. Initially, the autonomous colleges when established had only graduation courses. However, with advancement of time, the institutions were upgraded and had P.G. courses. The curricula and

Autonomous Colleges

A. Osmania University

1. University College for Women, Hyderabad.
2. Nizam College, Hyderabad.
3. R.B.V.R.R. Women's College, Hyderabad.
4. Anwar-Ul-Uloom College, Hyderabad.
5. S.S.R. Jyothi Arts & Science College, Khamam.
6. St. Francis College for Women, Secunderabad.
7. Pragati Mahayidyalaya, Hyderabad.
8. H.V. College of Arts, Commerce & Science Hyderabad.
9. St. Ann's College, Hyderabad.
10. Loyola Academy, Secunderabad.

B. Andhra University

11. D.N.R. College, Bhimvaram.
12. Sir C.R.R. College, Eluru.
13. Ch. S.D. St. Theresa's College for Women, Eluru.
14. S.R.V.B.S.J.B. Maharanee College, Paddapuram.
15. S.D.S. College of Arts & Applied Science, Shreeramnagar.
16. M.R. College for Men, Vizianagar.
17. St. Joseph's College for Women, Waltair.

C. Sri Venkateswara University

18. Jawahar Bharati, Kavoli.
19. Sri Padmavathi College for Women, Tirupati.
20. S.V. College for Men, Tirupati.
21. B.T. College, Madanapalle.

D. Nagarjuna University

22. Andhra Loyola College, Vijayawada.
23. P.B. Sidhartha College of Arts & Science, Vijayawada.

syllabi of many courses offered in autonomous colleges are different from those of parent university. Many innovative programmes viz. Diploma and Degree courses with special subjects like Computer, Electronics, rural development and agriculture, applied nutrition, microbiology, child psychology and family relations, public administration, business management, etc. have come into existence in autonomous colleges. Many of the autonomous colleges have two languages (i.e. English and Telugu) as media of instruction with the exception of Anwar-Ul-Uloom Autonomous College, Mallepalli, Hyderabad which also has Urdu as the medium of instruction. Autonomous colleges are doing experiments in innovative programmes. A profile of one of the pioneer institutions in respect of innovative programme, Loyola Academy, is given below :

Loyola Academy

Loyola Academy was started as an experimental institution by the Society of Jesus in Secunderabad in 1976 in the field of Vocational Education, when the world was just coming into vogue in India. In 1978 a full-scale degree course, B.Sc. Chemical Technology, affiliated to Osmania University, was started. This syllabus devised by Loyola Academy, containing elements of internal assessment and semester system set the pattern for other degree courses which followed later.

Loyola Academy is officially declared an autonomous college from 1992-93 by the UGC. It has five specialised degree courses which came into existence at different times. They are :

1. B.Sc. Chemical Technology (1978)
2. B.Sc. Farm Science & Rural Development (1983)
3. B.Sc. Computer Science & Engineering (1988)
4. B.Com. (Hons) (1991)
5. B.Sc. Electronic Technology (1991)

There is a placement cell in the college, quite a few of their students find jobs, in mostly private firms, by the completion of the courses. There is also campus recruitment.

Such an experimentation provides a silver lining in the otherwise cloudy scenario of higher education in the country.

University-Industry Interaction

Prof. G. Ram Reddy, Chairman, University Grants Commission, delivered the Convocation Address at the sixth convocation of the Thapar Institute of Engineering and Technology, Patiala. He said, "One of the serious complaints in India has been that the higher education sector and the industrial sector have worked in isolation from each other. In the university teaching and research there is not much input from outside. Similarly, industries are shy of making use of expertise available in the university system. This isolation has to end and the two sectors need to come together in their own interest and in the interest of the nation". Excerpts

Economic liberalisation has been taking place in India in a big way. This had naturally serious implications for higher education and the university-industry relationship. The Government announced the new industrial policy in July 1991 and thereafter it has taken series of measures to open up the Indian economy. The new economic policy makes substantial and fundamental changes in the process of socio-economic development; fiscal and monitoring policies and domestic resource allocation patterns. The accent is on de-control, decentralisation, foreign equity participation and the privatisation.¹ The new policy would throw up the Indian industry to outside investment and also technology collaboration. We now talk of market driven economy and integration with global economy. It means that Indian products have to be competitive in the international context and the quality of such products has to be of a high order.

All these years, the manufacturers and producers enjoyed a certain amount of protection and they concentrated on the domestic markets. There is no doubt that in some areas our industry has produced goods of high quality but in several other areas they cannot stand international competition. With liberalisation of the economy, the Indian industry will have to be strong enough to withstand the com-

petition from outside. As Dr. R.A. Mashelkar points out, "It is sad to see that barring a few isolated islands of excellence, our performance in engineering science has not been upto the mark... Unfortunately, the interface between science and engineering research as well as that between engineering research and engineering industry has been rather poor".² There is generally an erroneous impression that engineering research consists only of design development and aspects relating to production.³ The fact that a close symbiotic relationship exists between science and technology and therefore, new concepts and new knowledge make a direct impact on engineering has been, by and large missed. It is obvious that in order to produce world class technologies not only do we require high class science, but also the level of originality and innovation in engineering needs to be comparable to that in the frontline scientific research, on which the regional interventions are based. Our engineering graduates, by and large have not been attracted towards engineering science. The reason is that there has been no demand for engineering scientists in Indian industry.⁴

Since Independence, India had developed a large infrastructure in education and industry. In higher education the system has grown enormously. In 1950-51 there were

30 universities and 750 colleges, and in 1991 there were 171 universities and 7120 colleges. The enrolment in 1950-51 was 2,63,000 which rose to 44,25,247 students in 1990-91. The number of teaching staff in university colleges was 14,291 in 1965-66 which has gone up to 58,661 in 1990-91. If we add the teaching staff working in affiliated colleges the number would further increase. The number of teaching staff in these colleges was 70,385 and it shot upto 2,04,446.

Similarly the industry has made rapid progress since Independence. The industrial sector consists of large, medium and small industries. Both public and private industries have played a significant role in the development of the country.

One of the serious complaints in India has been that the higher education sector and the industrial sector have worked in isolation from each other. In the university teaching and research there is not much input from outside. Similarly, industries are shy of making use of expertise available in the university system. The isolation has to end and the two sectors need to come together in their own interest and in the interest of the nation.

It is said that higher education is the engine which drives development. The National Policy on Education - 1986 has observed that "Higher education provides people with an opportunity to reflect on the critical, social, economic, cultural, moral and spiritual issues facing humanity. It contributes to national development through dissemination of specialised knowledge and skills. It is, therefore, a crucial factor for survival".⁵ It is in the interest of the university system to interact closely with industry. Its curricula should take into account the needs and requirements of the industry. The students need to have some hands on experience while they are doing their courses in the universities. Some time ago, we had a meeting with a few industrialists in Baroda and the topic of discussion

was "University/Industry Collaboration".

The main complaint of the industrialists was that what was being done in the university system, whether teaching or research, was not relevant to them. When they employ products of the university they have to spend another year or so in training the students so that they could meet their requirements. Industrialists consider this a waste. Similarly, they find that the research concerns of the university system is not in congruence with their needs. They were also not confident whether they could use the university scientists in consultancy work, for they feel that the orientation of the university academics does not suit them.

Professor William Gouse, an American Engineer-Scientist, who visited this country a few years ago expressed surprise when he looked at the work being done by the IITs. He said: "The laboratories of these institutes are well-equipped. They have highly qualified faculty members and very good students. The teaching that goes on is of a higher quality. But what fills me with despair is the thought of how little all that goes on inside these institutes has relevance to the immense problems faced by the country and its people."⁶ Relevance, as Professor Sampath says, should be the corner stone of the process of education and training.

What applies to the university system applies equally well to the industry. There are several success stories now in the industrial field. But the industrial production has been on the basis of imported knowhow which has come in the form of packaged hardware and unabsorbed black boxes. The large base of our industry owes its size to our large markets and it can take little credit for opening up new markets through new products. For example, we are among the largest producers of bicycles, fans and sewing machines in the world and yet we have seen no

improvement in any of these, writes Mashelkar.⁷

Some interaction between university and industry is taking place in the country today. A study conducted by the Association of Indian Universities in seven universities reveals that the seven universities had 116 interactions. Their interaction could broadly divide into four categories – general research support, cooperative research, knowledge transfer, and technology transfer. The study reveals that there have been a total of 426 ongoing interaction programmes of which 60% were initiated by the universities. Out of a total of 254 university initiated programmes, 174 were in the knowledge transfer areas, followed by areas of cooperative and general research support, i.e., 45 and 30, respectively. Industries initiated 17% of the total collaboration programmes covered by the study. Out of these, 50 programmes were in the knowledge transfer category, followed by categories of cooperative research support (14), general research support (8), and technology transfer (1). About 11% of the total interaction programmes were initiated mutually by universities and industries while the remaining 12% interaction programmes occurred because of universities having prior relationship with industries and vice-versa.⁸

In the West it is very common that universities and industries collaborate very intimately. Professor Nigam refers to a 1982 meeting of representatives from Stanford, Caltech, U.C. Berkeley, Harvard, MIT and industry in Pajaro dunes, California to examine the question of interaction between the two sides. It is interesting to know that at the end of the conference the participants came to the conclusion that contractual arrangements can be developed that will permit private sponsorship of research in the university. Terms can be worked out to the satisfaction of both the sides.⁹ Virtually all academic R&D in the United States is carried out in about 185 doctorate

granting universities. The top 100 of these (here called research universities) receive 85% of the federal R&D funds and the top 10, about 25%. The remaining institutions of higher education (some 2900) are vital to the health of R&D universities and the nation because they educate about 75% of all undergraduate students although virtually no research is centred there.¹⁰

One must keep in mind, writes Leitmann, that a productive and profitable industry-university relationship rests on continuous supply of new knowledge and well-educated engineers and scientists with an entrepreneurial spirit together with "grass root" contact between industry and university researches.¹¹ A technologically literate public together with technologically literate politicians, is essential for the intelligent use of high technology in society.¹² The fact is that the university-industry interaction is on a back burner in this country. It is admitted by many that this segregation must end and several seminars have been held on the subject. But the progress in the direction of university-industry interaction is very slow and halting. Such interaction has not become a common feature of national life. There is a mutual suspicion and lack of trust in each other. This has to end.

Professor Sampath quotes with approval what Professor Douglass Wright, President of the University of Waterloo, Canada, had said: "It is myopic and even dangerous to regard universities as remote ivory-towers. It is equally a trivialisation of the potential of the university to regard it as standing in relation to industry as a supplier to a client, producing graduates and research results on order".¹³ I quote these words because at a recent meeting convened by the Andhra Pradesh Research Council where industrialists and academics were present, one of industrialists said that interaction between the industry and universities is possible only when the latter

goes to them and tells them what they have to offer. He said : "You have to come to me and tell me what you have to offer. You have to convince me that what you have to offer is useful to me". This, I thought, was a very short-sighted and an unenlightened approach because of the statement's smack of arrogance and contempt for the universities. The relationship between the industry and academia should be one of mutual respect and partnership. If the industry feels that they can exist without the academia they are not being far-sighted and realistic. If the universities are weak, in the long run the industry also would be weakened.

The progressive industrial houses like the Thapars, the Tatas and others have evinced interest in bringing higher education closer to the industry. Now they need to be a little more aggressive in promoting

such collaboration. Experience has shown that education has responded favourably to such initiatives. Similarly, higher education should cast off its "cloistered nun" approach and go forward and change its orientation of teaching and research to accommodate the needs of the industry. We need to make continuous and vigorous efforts to bring the industry and institutions of higher education together. *Laxmi* and *Saraswati* should come closer to each other – only then can there be substantial progress in the country. But, as we all know, *Saraswati* is a little shy, and I expect *Laxmi* to take the first steps in this direction.

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CALENDAR OF EVENTS

Proposed Date of the Event	Title	Objective	Name of the Organising Department	Name of the Organising Secretary/ Officer to be contacted
May 25-27, 1993	Sixth Annual Conference of the All India Association for Educational Research	Theme: Research in Educational Management	All India Association for Educational Research in collaboration with St. Ann's College of Edu- cation, Mangalore	Dr (Sister) Lydia Fernandes A.C., Principal, St. Ann's College of Education, Managalore
1st Week of June, 1993	Annual Conference of Indian Academy for Instructional Planning	Theme : Instructional Planning – an educational rethinking	Pravara Rural College of Education, Pravaranagar, Dist. Ahmednagar	Dr. P.L. Kirkire Secretary, IAIP, BEEd. College Loni (Pravaranagar) Dist Ahmednagar-413712
December 14-16, 1993	1993 Annual Conference of the Society for Research into Higher Education	Theme: Governments and the Higher Education Curriculum: Evolving Partnerships	Society for Research into Higher Education, London	Prof. Tony Becher, FDB, University of Sussex, Falmer, Brighton BN 1 9RG

Foundation for R&D Funding

A "National Debate on a National Crisis" was recently organised by the Jawaharlal Centre for Advanced Scientific Research (JNCASR), Bangalore. Eminent scientists expressed concern over the declining government support for science and technology and called for inclusion of these areas in the national developmental agenda. They regretted that "wrong sounds and noises" were being made at a wrong time vis-a-vis the fiscal support from government for science and technology. While countries such as Japan were doubling investments in these fields, the budgets of research institutions in India were being pruned so much so that adequate funds were not available even for infrastructure development and purchase of equipment and journals, they added.

Speaking on "The crisis in Indian science and technology: Some crucial factors for consideration," Director of Indian Institute of Science (IISc) and JNCASR President Prof C.N.R. Rao said the government should step up investments in higher education and science and technology and involve institutes such as the IISc and the Indian Institutes of Technology (IITs) in national development.

Regretting that allocation for science and technology was less than one percent of the country's gross national product (GNP), Prof Rao said the government should find resources to keep the R and D efforts going at the present pace. He suggested "selective funding" of projects in crucial areas of science and technology if the government could not mop up adequate resources for the entire sector.

Stating that the support from the Indian industry for R and D projects

so far was negligible, he said the industry should take funding of the projects as a "crisis operation".

He said the country could not afford to stay "loan happy" as its vastness demanded meeting the requirements in "tonnes and crores." The country should shed the habit of borrowing and make best use of the vast trained human resources and intellectual capacity for generation of funds. He called for immediate funding of projects in areas such as communication, transport and energy.

In his address on "new role of publicly funded R and D institutions in post-liberalisation era" National Chemical Laboratories (NCL), Pune, Director, Dr R. A. Mashelkar, said the government was willing to pump crores of rupees to revive or rehabilitate sick industrial units, but was asking the R and D organisations to pay the water and electricity bills from the industrial earnings.

Dr Mashelkar said the Indian industry had viewed R and D organisations as "supermarkets" where innovative technologies could be picked from the shelf. In addition, a majority of the industrial houses which recorded a turnover of over Rs 1000 crore invested only 0.2 to two percent in R and D. While there was a need for the industry and R and D laboratories to change their culture, the government should create the necessary environment for industrial growth and competitiveness. The steps he suggested included reintroduction of fiscal incentives for undertaking R and D which were withdrawn in 1985, allowing R and D companies to be promoted as commercial ventures

without tax liabilities, and making income from technology taxfree.

He said the Council for Scientific and Industrial Research (CSIR) should adopt a new culture in the wake of the changed economic scenario and adopt several bold measures such as offering technology against equity participation, establishing commercial arms to market technologies, products and services, and setting up consultancy wings in India and abroad.

Mr Hasmukh Shah, Chairman of G. E. Plastics India Ltd, who spoke on "globalisation – an entrepreneur's point of view" said the industry would require the support of R and D laboratories now and in future for choosing appropriate technology. The government, however, should create the necessary environment for setting up a foundation to fund R and D efforts. The industry and state governments were under constant pressure to develop infrastructure and undertaking social projects such as hospitals, roads and other amenities. The R and D units could also provide the industry with innovative ideas for generating resources, he added.

Dr S. Raha, chief executive of the International Chemical Industry (ICI), New Delhi called for changes in the Indian Patents Act while speaking on "India's stance on intellectual property rights: Some suggestions for a new strategy". He said the act was appropriate in the 1970s, but was of little importance as the world was moving into a new era of market driven economy. The R and D laboratories should concentrate on development of market oriented technologies in areas such as chemical engineering, textiles, pharmaceuticals and natural products.

Coaching for Competitive Exams

Mr. C. Ramulu, Director of Backward Classes Welfare, Government of Andhra Pradesh, said that the State Government would consider the proposals for financial assistance to the Kakatiya Adhyayana Kendram of Kakatiya University to improve and strengthen the coaching facilities for civil services examinations to the candidates belonging to the weaker sections of the society. He was inaugurating the pre-examination coaching programme for Civil Services (Preliminary) Examination 1993 of the Kakatiya Adhyayana Kendram at Kakatiya University recently.

Mr. Ramulu said that the Government was committed to the upliftment of the weaker sections and the Study Circles were necessary to enable the weaker sections to enter into civil services. The Government had taken care to see that the weakest among the weaker sections enter into civil services by competing with the upper strata or 'creamy layer' among the BCs, SCs and STs.

Mr. Ramulu called upon the weaker sections to join in large numbers and avail themselves of the coaching facilities provided by the Study Circles even amidst inadequate facilities of accommodation, etc.

Dr. K. Jayashankar, Vice-Chancellor of the Kakatiya University, who presided, said the university would be pleased to provide land if the Government came forward with necessary financial assistance for the construction of a separate building for the Kakatiya Adhyayana Kendram. Dr. Jayashankar assured all possible help from the university for any innovative venture if it was directed at improving the skills of the candidates of weaker sections.

Mr. J. Yellaiah, Director of the Adhyayana Kendram, in his report, said that established in 1985, the Kendram had registered an impressive progress in imparting the pre-

examination coaching for various competitive examinations to weaker sections viz., BCs, SCs and STs and added that the results were quite encouraging.

Prof. V. Bhaskara Rao, Member, Board of Management and Principal, University College, exhorted the candidates to make use to the facilities available to them to the fullest possible extent and come upto the standards expected of them.

Lohia and the Present Crisis

Shri Dhanik Lal Mandal, Hon'ble Governor of Haryana and Chancellor, Kurukshetra University, recently inaugurated a two-day National Seminar on "Relevance of Dr. Ram Manohar Lohia's Ideas Today" organised by the Department of Political Science of the university. In his address Shri Mandal stressed upon the redefinition of the concept of secularism as the country was facing a challenge to its secular ethos. He viewed that this could only be done through the study of Lohia's world vision. Lohia's views may not be conclusive, but they certainly throw light on different facets of various problems. An analysis of these could contribute in finding a definite solution, he opined. He also expressed the views that the present problems could be resolved by a synthesis of the best ideas from all feligions.

Dr. S. Arya, Vice-Chancellor, in his welcome address said that Lohia was a multifaceted personality who had expressed his thoughts on various aspects of Indian political and social systems. He felt that an indepth understanding of Lohia's vision might give us a ray of hope for solving certain complex problems of contemporary times.

In his keynote address, Professor Parimal Kumar Das of Jawaharlal Nehru University, New Delhi observed that Lohia's ideas on religion were not in the orthodox terms. His religion was to help humanity at large. He argued that if we had understood Lohia properly

and applied his vision of religion and politics, then the contemporary communal crisis could be resolved amicably.

Shri Ladli Mohan Nigam, a close associate to Dr. Lohia, apprised the participants with the views of Lohia on culture, democracy and environment. He felt that Lohia not only cherished noble ideas but also put them into action. Consequently, Lohia was still relevant in understanding political, economic and social life of India.

Professor Ranbir Singh, one of the Directors of the Seminar, observed that the ideals of democracy, secularism and socialism were being challenged by the forces of fascism, fundamentalism and neo-imperialism. This had endangered even the sovereignty and unity of the country. At this juncture, study of Lohia, who had given us an indigenous model of development, becomes relevant, he said.

The participants at the seminar included political scientists, social activists, politicians, literary critics and eminent Lohiaites.

Vizzy Trophy

The Inter-Zonal University Tournament for Vizzy Trophy was recently organised jointly by the AIU and the Board of Control for Cricket in India (BCCI) at Madras. South Zone regained the trophy by defeating West Zone by 267 runs. The Scores were : South Zone - 1st Innings : 321 runs; 2nd Innings : 349 runs; West Zone - 1st Innings : 184 runs; 2nd Innings : 219 runs. The trophy was presented to the winning team at a function held in Madras recently by Mr. Ashok Kumbet, Treasurer, Tamil Nadu Cricket Association. Dr. G.P. Gautam, Deputy Secretary (Sports), AIU, presided over the function.

The Vizzy Trophy is instituted by the BCCI to commemorate the memory of Dr. Vijay Anand, Maharajkumar of Vizianagaram, popularly known as "Vizzy". It is awarded every year to the winning team in the Inter-Zonal University Tournament.

News from Agricultural Universities

Agroclimatology and Sustainable Agriculture

Sound policies to protect the resource base, which is the foundation for sustainable agriculture, are needed to increase the productivity in stressed environments, said Dr. Har Swarup Singh, Indian Ambassador to Maldives. He was delivering the keynote address at the inaugural function of a six-day international symposium on Agroclimatology and Sustainable Agriculture in stressed environments organised recently in Hyderabad by the Indian Council of Agricultural Research (ICAR), International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), and Soil Management Support Services of the USAID.

Dr. Singh said the task of increasing the productivity of drylands was difficult, but not impossible. It could be achieved with the backing of good policies.

"The concept of sustainable agriculture looks sound, but it requires capital investment, which the dryland farmers could not afford. In order to increase the income of the dryland farmers, other non farm economic activities will have to be integrated into it," he pointed out. He further stressed that environment was the underlying consideration for all developmental activities, and conservation of natural resources such as soil and water should be given the due importance.

Dr. I.P. Abrol, Deputy Director-General, ICAR, in his opening remarks pointed out that new strategies should be developed and the best of existing techniques employed to manage the natural resources that were crucial for achieving sustainable high yields from drylands. "We are faced with the serious challenge of growing more food from the shrinking land resources. Much of the foodgrains would have to come from the drylands which account for

about 65 percent of the arable lands in the country, he said.

Dr. N.C. Brady, Consultant for the International Fund for Agricultural Research of the UNDP, outlined the perspectives on sustainable development with particular emphasis on human resource development coupled with institutional development.

Dr. R. D. Plowman, Agricultural Research Services, U.S. Department of Agriculture, said that agriculture in stressed environments was not the problem of developing countries alone, and even advanced countries were faced with low productivity from such regions. He emphasised the need to arrest soil erosion and harvest and conserve water to increase the productivity of the rainfed farms.

Dr. Hari Easwaran of the Soil Conservation Services, USDA, while highlighting the challenges of doubling the foodgrains output without endangering the ecological base said the indigenous agricultural practices, which were sustainable farming systems, should be identified, and the traditional wisdom should be blended with modern scientific knowledge.

Dr. V.L. Chopra, Director-General, ICAR, speaking on the sustainability research in the country, said that monetary constraints and social compulsions on the part of dryland farmers hampered the technological adoption in rainfed agriculture. The rich traditional wisdom possessed by the dryland farmers should be put to the best possible use to increase the production through a sustainable development pathway, according to Dr. Chopra.

Dr. J.G. Ryan, Director-General, ICRISAT, presenting an overview of ICRISAT's approach to sustainable agriculture, called for a major inter-

national initiative to protect the fragile ecosystem of the semi-arid tropics. In order to meet the challenge of producing more food and feed, he said enormous pressure is put on the rain fed farms, and this could result in the degradation of this resource base.

About 110 eminent scientists from all over the world participated in the symposium. Vice-Chancellors of many Universities also participated.

IARI Convocation

Mother Teresa called upon agricultural researchers to help the poor with their knowledge so that the poor can get at least two square meals a day. She was speaking at the 31st convocation of the Indian Agricultural Research Institute (IARI) held in New Delhi recently.

Addressing the researchers, she hoped that they would make practical use of their knowledge which she considered a gift of God. "Put your knowledge into life so that the poor can enjoy its fruits. Give peace and joy to the world by understanding and love. Let us work together and help the poor," she appealed.

Besides conferring degrees of Doctor of Philosophy to 104 students and of Master of Science to 53, she gave away the degree of Doctor of Science to Dr. A.B. Joshi, a scientist and educationist and also an alumnus of the institute, having received the Associateship Diploma in 1989.

The Hooker Award, which is given once in two years for research work in agriculture, animal husbandry and fisheries, was given to Dr. C.L. Acharya, chief scientist of Himachal Pradesh Krishi Vishwa Vidyalaya, for 1990-91. The Dr. S.S. Bains memorial award was given to Dr. A.V. Solanke who is a lecturer in the Miland College of Science, Aurangabad.

Releasing the nine crop varieties including a new hybrid tea rose variety named after Benjamin Pal

and a publication on internationally recognised important plant "Neem", Agriculture Minister Shri Balram Jakhar urged the scientists to go into the fields and work there. He said the scientists needed to rub shoulders with the farmers, to make production successful.

He urged the public and private sectors to join hands so that production could be increased in all States.

Stress cannot be put on just three States – other States also should help in increasing production, he said. He was of the opinion that the Krishak Vikas Kendras which had already been established in some States, should help the farmers in educating them on the latest technology.

He emphasised that those who work harder in the fields should be given incentives. He said those students who had land should instead of seeking government jobs, work in the fields and do some practical

work. By seeking employment in Government there was an "unnecessary surplus" in Government offices, he added.

Regarding the Dunkel proposal, he lamented that people criticised it without understanding the scheme. He categorically said that the Government would not compromise on any proposal if it said that the seeds of Indian farmers would not be used. He was of the opinion that every proposal had to be in the interest of the Indian farmer. "It cannot be a one-way traffic; it has to be a two-way traffic – otherwise the Government would not be a party," he added.

Mr Jakhar was also of the view that Finance Minister should reorient policies in favour of the farmers. He felt there was need to protect the rights of the farmers.

The Dean of the IARI, Dr. N.N. Goswami, and Director S.K. Sinha also spoke on the occasion.

News from UGC

Countrywide Classroom Programme

Between 15th March to 20th March, 1993 the following schedule of telecast on higher education through INSAT-1D under the auspices of the University Grants Commission will be observed. The programme is presented in two sets of one hour duration each every day from 1.00 p.m. to 2.00 p.m. and 4.00 p.m. to 5.00 p.m. The programme is available on the TV Network throughout the country.

Ist Transmission

1.00 p.m. to 2.00 p.m.

15.3.93

"The Origins of Quantum Theory : From Planck to Bose – IV Satendranath Bose"
"Management Functions and Behaviour : Communication Process"
"Fresh from your Garden"

16.3.93

"Guar – An Old Crop with New Uses"
"Ways of Thinking – II. Contours of Time"
"Management of Simple Childhood disorders"

17.3.93

"Images of Bats"
"Orchid – The Royal Plant"
"Eyes in the Sky – Remote Sensing – II"

18.3.93

"Understanding Transistor Radio Receiver – II"
"Glimpses of Girasia Life – II"
"19th Century Russian Literature : Nikolai Alexevich Nekrasov"

19.3.93

"Media and Aggression"
"By the People – VII. Using Legal Assistance and Using Government Agencies"

20.3.93

"The Roorkee Hat"
"Islamic Calligraphy through the Ages – II"
"Week Ahead"

Ist Transmission

4.00 p.m. to 5.00 p.m.

15.3.93

"Facing the Future – II"
"Of Figures And Columns The World Of Chartered Accountants – I"
"Human Resources Management"

16.3.93

No Telecast

17.3.93

"Tentmaking Bats"
"Fastening Devices"
"The Great Pyramid A Tomb or an Observatory"

18.3.93

Carbon Flies"
"Colourful World Of Minerals"
"Brain And Language Problems : Aphasia"

19.3.93

"Statistics – Stratified Random Sampling – II"
"Wind Surfing"
"The Week Ahead"

20.3.93

No Telecast

News from Abroad

CSIC Chair in Indian Studies

The Centre for Strategic and International Studies (CSIS), Washington (USA), a leading and influential think tank, is reported to have decided to establish an endowed chair in Indian studies.

The CSIS, whose projects have often been the cornerstone of American policy, said that the chair "will support a distinguished specialist who will analyse political and economic developments in India." Mr Douglas Johnston Jr, CSIS's executive vice-president and chief operating officer, said that the "telling difference," between a chair at CSIS and an Indian chair in some universities, "will be the policy impact we will have." Mr Johnston said that "we see India as a formidable player on the world scene in the years ahead."

The CSIS said that "in addition to its internal affairs, India's relations with other countries of the sub-continent and with the US will be important research components of the CSIS's Indian chair." The proposal said that the specialist "should have a demonstrated capacity for the kind of interdisciplinary research that will enable CSIS to make a significant contribution to the study of India's role in the future regional and global order."

Acknowledging that "of increasing significance is India's role in international trade and commerce," the proposal said "CSIS Indian chair will represent a source of major expertise in understanding the internal dynamics of India's economy and its potential in the global economy."

It said that through the establishment of the chair on Indian studies, the CSIS hoped to become "an important source of policy analysis on this poorly-understood but immensely important country and focus greater attention with the

Washington policy community on South Asia as a whole."

The proposal noted that the "neglect of India in the context of American strategic studies is especially unwarranted." Thus the establishment of an endowed chair in Indian studies, it said, "will help remedy the information and con-

ceptual vacuum surrounding subcontinent policy issues in Washington." The proposal said that the chairholder will be drawn from prominent scholars and practitioners in the field.

It said that the establishment of the chair "will require an endowment of \$3 million. The CSIS, considered a leading public policy research institute in international affairs, provides policy makers with a strategic perspective on issues relating to international economics, politics, security and business.



MANAGEMENT ADMISSION (PGDBM)

CENTRE FOR MANAGEMENT DEVELOPMENT, MODINAGAR-201204, INVITES APPLICATIONS FOR **ADMISSION TO ITS TWO-YEAR FULL TIME PGDBM PROGRAMME (1993-1995)** APPROVED BY ALL INDIA COUNCIL FOR TECHNICAL EDUCATION (A STATUTORY BODY OF GOVT. OF INDIA).

Eligibility : Graduate Degree of a Statutory or Deemed University in any discipline with a minimum of 50% marks in the aggregate of all examinations of the Degree Course.

Selection Procedure : A written All-India management Aptitude Test (AIMAT) to be conducted on 23.05.1993 at 55 Centres followed by Group discussion and Personal Interview at Modinagar.

Prospectus/Application : Available from CMD against payment of Rs. 200/- (Rs. 220/- if desired by Registered Post) in cash or through a bank Draft drawn in favour of "Centre for Management Development" on any bank in Modinagar.

Placement : CMD has established an efficient Placement Wing which helps students secure suitable jobs in Industry through Campus Interviews. All passed students of CMD have secured gainful positions in large Industrial Houses Banks etc.

Hostel : Hostel accommodation is available for male and female students separately.

Last Date : 8-4-1993 for procurement of application forms and 23-4-1993 for receipt of completed Applications at Centre for Management Development-Modinagar-201204 (U.P)

North Zone Youth Festival

The Inter University North Zone Youth Festival was organised at the Rani Durgawati Vishwavidyalaya, Jabalpur on 19-23 January 1993. National Integration was the theme of the five-day festival in which 300 students from nine universities participated.

"The Nation's future depends on the youth for its cultural, emotional and national integration and today's youth can promote happiness, inspiration and love among all individuals through their art which transcends all language and other barriers", observed Mr. Justice Prakash Navlekar who was the chief guest at the inaugural function. Dr. S.P. Kosta, Vice-Chancellor, Rani Durgawati Vishwavidyalaya, who presided, exhorted the students that it was more important to be able to participate in the competition than to win an award. He remarked that true knowledge lay in each one getting acquainted with another and experience the joys and sorrows and that will lead towards establishing National Integration.

The festival opened with Classical Solo Dance in which Jammu University and Punjabi University participated. The sound of Tabla & Ghungroo enveloped the atmos-

phere with Tal and Laya. The performances of Kathak Dance were applauded and the Tal, Laya coordination was remarkable.

In the Solo section of the Western Vocal, Sumit Sharma of Jammu University sang about the 'Maniac' and 'The Boxer', Jagdeep of Punjabi University, presented 'Top of the World' and 'Yesterday once more', while the singer of Kurukshetra University told what it is like "Waiting for you".

In the group category, students of Jammu University reminded of the good old chestnuts 'Lay down Sally' and 'Cherie-Cherie Lady'. Punjabi University, repeated "Top of the World" and sang "Constantly" while Kurukshetra University played the latest hit "Pretty Woman".

Group dances from different universities represented the folk traditions. They won the appreciation of the audience through their tapping feet.

The 'One Act Plays' depicted the present day problems. If one dealt with the liberation of women, the other focused on the plight of young educated men. One was struck by the awareness of the young

generation towards the modern problems. The plays staged included (i) Savaser Gehnu, (ii) Ardha Narish, (iii) Raja Ka Baja, (iv) Natak Nanhi, (v) Trishanku, and (vi) Ek Tha Gadhha Aladad.

In the group songs, the first choral group of Jammu University presented their melodies composed in Rag Malhar that eulogised the splendours and the glory of the rainy season. The variations in rhythm and their striking orange attire added a special quality of their rendering. The second team from Punjabi University presented their traditional Punjabi marriage song which was controlled and coordinated in its varied rhythms. This was followed by the patriotic songs rendered by the teams of Guru Nanak Dev University, M.D. University, Rohtak and the Kurukshetra University. The songs composed in classical style, devoted to glory of India and based on folk rhythms were very much appreciated by the audience.

Mr. Y.D. Dharmadhikari, Ex-Advocate General of MP High Court was the chief guest at the valedictory function presided over by Dr. S.P. Kosta, Vice-Chancellor, Rani Durgawati University.

The Jammu University bagged the overall championship Trophy while the runner's up trophy went to Punjabi University, Patiala.

North Zone Inter University Youth Festival

RESULTS

A. MUSIC

(a) Classical Vocal Solo	(1) Guru Nanak Dev University	(b) Classical Instrumental Solo (Percussion)	(1) University of Jammu
	(2) University of Jammu		(2) Punjabi University

- | | |
|--|-------------------------------|
| (c) Classical Instrumental Solo (Non-percussion) | (1) Guru Nanak Dev University |
| | (2) University of Jammu |
| (d) Light Vocal (Indian) | (1) Punjabi University |
| | (2) Kurukshetra University |
| (e) Western Vocal (Solo) | (1) Punjabi University |
| | (2) University of Jammu |
| (f) Group Song (Indian) | (1) Maharshi Dayanand Univ. |
| | (2) University of Jammu |
| (g) Group Song (Western) | (1) Punjabi University |
| | (2) University of Jammu |

B. DANCE

- | | |
|-----------------|----------------------------|
| (a) Folk/Tribal | (1) Himachal Pradesh Univ. |
| | (2) Punjabi University |
| (b) Classical | (1) Punjabi University |
| | (2) University of Jammu |

C. LITERARY

- | | |
|----------|---------------------------|
| (a) Quiz | (1) University of Delhi |
| | (2) University of Roorkee |

D. THEATRE

- | | |
|------------------|-----------------------------|
| (a) One Act Play | (1) Guru Nanak Dev Univ. |
| | (2) Maharshi Dayanand Univ. |
| (b) Skits | (1) Guru Nanak Dev Univ. |
| | (2) Maharshi Dayanand Univ. |
| (c) Mime | (1) University of Jammu |
| | (2) Guru Nanak Dev Univ. |

E. FINE ARTS

- | | |
|--------------------------|-----------------------------|
| (a) On the Spot Painting | (1) Punjabi University |
| | (2) University of Jammu |
| (b) Collage | (1) University of Jammu |
| | (2) Punjabi University |
| (c) Poster Making | (1) University of Jammu |
| | (2) Punjabi University |
| (d) Clay Modelling | (1) Punjabi University |
| | (2) Maharshi Dayanand Univ. |
| (e) Cartooning | (1) University of Jammu |
| | (2) Kurukshetra University |

CHAMPIONSHIP TROPHIES

- | | | |
|----------------|---|---------------------------|
| Music | : | University of Jammu |
| Dance | : | Punjabi University |
| Theatre | : | Guru Nanak Dev University |
| Literary Event | : | University of Delhi |
| Fine Arts | : | University of Jammu |

Overall Championship Trophy	_____	University of Jammu
Runner's Up Trophy	_____	Punjabi University, Patiala

Dreams and their Meaning

R. S. Bhatnagar*

Yehia Gouda. Dreams and their Meanings in the Old Arab Tradition. Illustrated by Mario Mercier, 471 pp. New York, Vantage Press, 1991. \$18.95.

Dreams and their Meanings in the Old Arab Tradition written by Yehia Gouda and illustrated by Mario Mercier is one of the foremost attempts of our time at presenting the study of dreams and the interpretations in the light of Islamic traditions. Literature is not traceable on such a specific and significant branch of knowledge.

Much has been said on the interpretation of dreams from psychological side. Psychologists like William James, Freud and their followers consider dreams as the suppression of desires. They are the product of our sub-conscious mind. Yehia Gouda deserves appreciation for interpreting dreams and visions from religious and spiritual standpoint. Little has been said on the spiritual and mystical interpretation of our dreams. The muslim mystics in general and the celebrated Sufis of various *taruq* or *Sufi* Orders have given great emphasis on the theoretical and practical implications of dreams seen by the followers of the mystical journey. A dream for the *salik* or the pilgrim on the way to God is an indication of his spiritual progress. The *Pir* or the Divine Master keeps a watch on the dreams of the disciple and thus becomes aware of his inward progress through interpretation of various sorts of dreams. This treatise opens a new chapter in this direction. In many respects the book fills a gap in the reading list of those who are eager

for having a lucid and comprehensive account of spiritual interpretation of dreams based on the enlightenment of soul through revelation of God. Writing on such an abstract and unpopular field of knowledge is a matter of great credit.

Yehia Gouda's explanation of three types of dreams – rooya, ahlam and the dreams produced by *nafs* is a significant account of dreams. He gives valuable suggestions for having good dreams. The basic rules of interpreting dreams are also provided. The author has given important instructions which should be observed before going to sleep for seeing the dreams of mystical and spiritual character. The biographical notes providing the authentic litera-

ture of the eminent interpreters like Ibn Sireen, Ibn Shaheen Al-Nabulsi, Jaafar al-Sadeq, Abu Said Al-Wa'ez and Al-Dinawari given in the book are helpful for the deep study of the art of interpretation of dreams particularly from religious standpoint.

Yehia Gouda's book contains a long list of dreams and their authentic interpretations in the chapter of 'Concise Dictionary and Encyclopaedia of Dreams'. All essential varieties of dreams with religious, spiritual, mystical, moral, social, psychological and physiological character have been included in the list. This is helpful for one who wants to understand the real meanings and the interpretation of his dream.

The layout of the treatise is extremely clear and well set out in paragraphs. It is a thought-provoking thesis which is a rich contribution to Islamic literature. The book merits inclusion in any reading list for the indepth study of dreams. It is useful not only to the Arabic speaking world but also to the followers of any culture in the name of spiritualism and mysticism.

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University of Allahabad,
Allahabad-211 002.



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New Delhi-110065.

RESEARCH IN PROGRESS

A list of research scholars registered for doctoral degrees in Indian Universities

PHYSICAL SCIENCES

Chemistry

1. Batham, Shyam Babu. **Studies on potential antiviral triterpenoidal constituents of some citrus plants.** HS Gour. Dr V K Saxena, Prof, Department of Chemistry, Dr Hari Singh Gour Vishwavidyalaya, Sagar.

2. Bhargava, Neelu. **Kinetics of vanadium (V) - oxidation of some amino acids by vanadium (V) in sulphuric acid medium.** HS Gour. Dr (Smt) Archana Pandey, Lecturer, Department of Chemistry, Dr Hari Singh Gour Vishwavidyalaya, Sagar.

3. Chaubey, Hari Mohan. **Chemical analysis and biological activities of plant products and other organic compounds.** HS Gour.

Dr J T Rao, Reader, Department of Chemistry, Dr Hari Singh Gour Vishwavidyalaya, Sagar.

4. Gupta, Rajesh. **A comparative study of gaseous adsorption by zeolite molecular sieves.** HS Gour. Prof S P Banerjee, Prof and Head, Department of Chemistry, Dr Hari Singh Gour Vishwavidyalaya, Sagar.

5. Gupta, Vipul. **Structural investigations of biologically active constituents of some cucumis plants.** HS Gour. Dr R N Yadav, Lecturer, Department of Chemistry, Dr Hari Singh Gour Vishwavidyalaya, Sagar.

6. Jain, Padam Kumar. **Synthesis and biological activity of some compounds derived from heterocyclic ring.** HS Gour. Dr S K Shrivastava, Reader, Department of Chemistry, Dr Hari Singh Gour Vishwavidyalaya, Sagar and Dr (Mrs) Savitri Shrivastava, Lecturer, Department of Chemistry, Dr Hari Singh Gour Vishwavidyalaya, Sagar.

7. Mukharya, Sapna. **Studies on potential antiviral saponins of Spondias managifera Wilid.** HS Gour. Prof V K Saxena, Department of Chemistry, Dr Hari Singh Gour Vishwavidyalaya, Sagar.

8. Prasad, V S. **Synthesis and characterisation of L C P and molecular composites.** HS Gour. Dr C K S Pillai, Regional Research Laboratory, Thiruvananthapuram and Dr C Pavithram, Regional Research Laboratory, Thiruvananthapuram.

9. Roy, Anila. **Phytochemical investigations of dalbergia plants.** HS Gour. Dr R N Yadav, Lecturer, Department of Chemistry, Dr Hari Singh Gour Vishwavidyalaya, Sagar.

10. Shrivastava, Rashmi. **Synthesis, characterisation and ion exchange applications of oxide and hydroxide of group IV and V elements.** HS Gour. Dr O P Shrivastava, Reader, Department of Chemistry, Dr Hari Singh Gour Vishwavidyalaya, Sagar.

11. Tiwari, Nisha. **Synthesis of some compounds derived from heterocyclic ring and to evaluate their biological activity.** HS Gour. Dr S K Shrivastava, Reader, Department of Chemistry, Dr Hari Singh Gour Vishwavidyalaya, Sagar.

12. Yadav, Durgesh. **Studies on coordination compounds of metals with selected organic ligands.** HS Gour. Dr R K Goutam, Reader, Department of Chemistry, Dr Hari Singh Gour Vishwavidyalaya, Sagar.

Earth Sciences

1. Karkun, Rajesh. **An integrated approach on the hydrogeological regime in a part of Tandula-River Basin, Durg District M P.** Vikram. Dr Pramendra Dev, Reader, F-2/11, Vikram University Campus, Ujjain.

2. Onkar Singh. **Petrological and geochemical studies of coals and associated sediments of Umaria Coalfield, Sone Valley, M P, India.** Vikram. Dr K N Singh, Lecturer, School of Studies in Geology, Vikram University, Ujjain.

3. Sreelatha, R K. **Mineralogy, geochemistry and genesis of kaoline around Kundara, Kerala.** Kerala. Dr K K Ramachandran, Head, Division of Environmental Science, Centre for Earth Science Studies, Thiruvananthapuram.

4. Sreenivasa Rao, Peddi. **Flow stratigraphy and palaeomagnetism of Deccan volcanics around Gujri and East of Pune with emphasis on correlations between Northern and Western Ghat traps.** Vikram. Dr S F R Khadri, Lecturer, School of Studies in Geology, Vikram University, Ujjain.

5. Singh, Brajesh Kumar. **Stratigraphy and palaeomagnetism of a part of Mandu Plateau, Dhar District, M P.** Vikram. Dr S F R Khadri, Lecturer, School of Studies in Geology, Vikram University, Ujjain.

BIOLOGICAL SCIENCES

Forensic Sciences

1. Agrawal, Vijay. **A toxo-analytical study of some tricyclic antidepressant drugs.** HS Gour. Dr J D Sharma, Lecturer, Department of Criminology and Forensic Sciences, Dr Hari Singh Gour Vishwavidyalaya, Sagar.

2. Dhawara, Harmindar Singh. **A toxo-analytical and histopathological study of some organophosphorus pesticides.** HS Gour. Dr J D Sharma, Lecturer, Department of Criminology and Forensic Sciences, Dr Hari Singh Gour Vishwavidyalaya, Sagar.

Environmental Sciences

1. Mohanan, M. **System dynamic modelling for pollution control in a developing context.** Kerala. Dr V Nandamohan, Department of Future Studies, University of Kerala, Thiruvananthapuram.

Microbiology

1. Juliet, John. **Study of the biochemical determinants in alcoholics.** Kerala. Dr A Remla, Biochemist, Department of Gastroenterology, Medical College, Thiruvananthapuram and Dr M Narendranathan, Prof and Head, Department of Gastroenterology, Medical College, Thiruvananthapuram.

2. Sreedharan, V P. **Detailed microbiological studies of bacillus synthesising cyclodextrin - glycosyl-transferase with special reference to alkalophilic, thermophilic species.** Kerala. Dr V Thankamani, Scientist, Regional Research Laboratory, Thiruvananthapuram.

Botany

1. Nazarudeen, A. **An assessment of the economically important fruit yielding taxa of Western Ghats with special reference to some lesser known species.** Kerala. Dr S Seeni, Scientist, Tropical Botanical Garden and Research Institute, Palode and Dr K C Koshy, Scientist, Tropical Botanical Garden and Research Institute, Palode.

2. Punjani, Bhasker Laxmishankar. **An ethnobotanical study of tribal areas of District Sabarkantha.** N Gujarat. Dr A B Vora, Gujarat University, Ahmedabad.

3. Sreekumar, S. **Secondary product synthesis by in vitro root cell cultures of selected plants.** Kerala. Dr P Pushpangadan, Director, Tropical Botanic Garden and Research Institute, Palode.

4. Sudhakaran, M V. **Biosystematic studies in hedyotideae and allied tribes, Rubiaceae.** Kerala. Dr B Vijayavalli, Department of Botany, University of Kerala, Kariavattom.

Medical Sciences

1. Awasthi, Shubhini. **Development and characterisation of stimuli sensitive polymer based hypodermal system (s) of some drugs.** HS Gour. Dr S P Vyas, Lecturer, Department of Pharmaceutical Sciences, Dr Hari Singh Gour Vishwavidyalaya, Sagar.

2. Dangi, Jawahar Singh. **Preparation and characterization of mixed nickel based systems for some poorly absorbable drugs.** HS Gour. Prof V K Dixit, Department of Pharmaceutical Sciences, Dr Hari Singh Gour Vishwavidyalaya, Sagar.

3. Jain, Raj Kumar. **Development of liposomal drug delivery system for treatment of leprosy.** HS Gour. Prof V K Dixit, Department of Pharmaceutical Sciences, Dr Hari Singh Gour Vishwavidyalaya, Sagar.

4. Jain, Sandeep. **Search for some novel 1,3,4 - oxadiazole derivatives for potential biological activities.** HS Gour. Dr Pradeep Misra, Lecturer, Department of Pharmaceutical Sciences, Dr Hari Singh Gour Vishwavidyalaya, Sagar.

5. Nekhare, Sushama. **Development and characterization of liquid membrane based therapeutic systems of some drugs.** HS Gour. Dr S P Vyas, Lecturer, Department of Pharmaceutical Sciences, Dr Hari Singh Gour Vishwavidyalaya, Sagar.

6. Sylaja, N. **Tissue changes on administration of anticarcinogenic plant extracts.** Kerala. Dr Mathew M Oommen, Department of Zoology, University of Kerala, Thiruvananthapuram and Dr Y M Fazil Marickar, Assoc Prof, Department of Surgery, Medical College, Thiruvananthapuram.

THESES OF THE MONTH

A list of doctoral theses accepted by Indian Universities

PHYSICAL SCIENCES

Mathematics

1. Bandyopadhyay, Sudeshna. **On some radiation and diffraction problems in the linearised theory of water waves.** Calcutta.

2. Basant Ram. **Estimation of fertility parameters in rural area in Jammu.** Jammu. Dr R Tiwari, Reader, Department of Mathematics, University of Jammu, Jammu.

3. Gupta, Virendra Kumar. **A study on the degree of approximation of a function by fourier orthogonal expansion.** Vikram. Dr Ashutosh Pathak, Lecturer, Department of Mathematics, Vikram University, Ujjain.

4. Guru, Kavita. **Some problems on summability methods.** HS Gour. Dr S K Shrivastava, Department of Mathematics, Dr Hari Singh Gour Vishwavidyalaya, Sagar.

5. Hajra, Mrityunjay. **Some problems on generating functions of special functions from classical and group-theoretic view point.** Calcutta.

6. Jain, Rakesh Kumar. **Some problems related to fixed point theory.** HS Gour. Dr R K Jain, Department of Mathematics, Dr Hari Singh Gour Vishwavidyalaya, Sagar.

7. Kumar, S. **Bunch resolution: A nonclausal inference mechanism.** Sathya Sai.

8. Modak, Madhav Ramchandra. **Lattice paths and enumeration of indexed monomials.** Panjab.

9. Mohammad Arif. **Motions in the field of two rotating magnetic dipoles.** Jamia. Dr Z A Taqvi, Department of Mathematics, Jamia Millia Islamia, New Delhi and Dr K B Bhatnagar, Department of Mathematics, Dr Zakir Hussain College, University of Delhi, Delhi.

10. Nema, Hareesh Kumar. **Some problems on approximation theory.** HS Gour. Dr K Qureshi, Principal, Govt Girls Degree College, Narshinghpur.

11. Patel, Birendra Narayan. **Some problems in general topological spaces: Associated with some new separation axioms.** HS Gour. Dr K K Dube, Department of Mathematics, Dr Hari Singh Gour Vishwavidyalaya, Sagar.

12. Prasad, Bishnu Dev. **The motion of (2+V) bodies when the primaries are taken as two magnetic dipoles.** Jamia. Dr Z A Taqvi, Department of Mathematics, Jamia Millia Islamia, New Delhi and Dr K B Bhatnagar, Department of Mathematics, Dr Zakir Hussain College, University of Delhi, Delhi.

13. Sankaran, P G. **Characterization of probability distribution by reliability concepts.** CUST. Dr N Unnikrishnan Nair, Prof, Department of Statistics, School of Mathematical Sciences, Cochin University of Science and Technology, Kochi.

14. Radhika, D. **On congruence properties of certain classes of arithmetic functions.** Osmania.

15. Raji Reddy, Sheelam. **Computational techniques in transient magnetohydrodynamic, dusty viscous and run-up flows.** Osmania.

16. Ramachandran, G. **Groups, graphs and generalized colouring.** Bharathidasan. Dr N Sridharan, Reader, Department of Mathematics, Alagappa University, Karaikudi.

17. Ravi Kishore, Malla Pragada Venkata Kanaka. **Separation axioms in fuzzy topological spaces.** Andhra.

18. Sharma, Bhawani Shankar. **Some problems on fixed point theorems.** H S Gour. Prof S K Shrivastava, Department of Mathematics, Dr Hari Singh Gour Vishwavidyalaya, Sagar.

19. Soni, Ganesh Kumar. **On fixed point theorems.** H S Gour. Dr K C Shrivastava, Department of Mathematics, Dr Hari Singh Gour Vishwavidyalaya, Sagar.

20. Srinivas, P D N. **Existential and numerical study of implicit differential equations.** Sathya Sai.

21. Tiwari, Poonam. **Congenerators and relative projective modules.** H S Gour. Dr R S Singh, Department of Mathematics, Dr Hari Singh Gour Vishwavidyalaya, Sagar.

Statistics

1. Acharya, Sarat Kumar. **Upper and lower functions for diffusion processes and their applications.** Sambalpur. Prof M N Mishra, Post Graduate Department of Statistics, Sambalpur University, Jyoti Vihar, Burla.

2. Sastry, Vaddi Papayya. **Some heterogeneous queueing models with two state input source.** Andhra.

3. Singh, K K. **The applications of neighbour type designs, their analysis and methods of constructions.** Devi Ahilya. Dr Bhagwan-das, Department of Statistics, Devi Ahilya Vishwavidyalaya, Indore.

4. Sinha, Pankaj. **Robustness of statistical prediction to non-normal prior distributions.** Delhi.

Physics

1. Aghamkar, Praveen. **Steady state nonlinear optical effects in semiconductors.** Barkatullah.

2. Anand, Abhai. **Electro optic effort in LiNbO_3 and LiTaO_3 .** Garhwal. Dr N S Panwar, Birla College, Srinagar.

3. Bagchi, Joydeep. **A study of radio emissions from clusters of galaxies: cD galaxies and the very steep spectrum sources.** IISc.

4. Choudhary, Brajesh Chandra. **A study of high transverse momentum direct photon production in interactions of 500 GeV/c pions and proton beams on a beryllium target.** Delhi.

5. Dash, Gananath. **Studies on the effect of some physical process on microwave properties of impact diodes.** Sambalpur.

Prof S P Pati, Post Graduate Department of Physics, Sambalpur University, Jyoti Vihar, Burla.

6. Dattamajumdar, Nandini. **Ion solid interaction study by SIMS technique.** Calcutta.

7. Deomurari, Kailash Chandra. **Iterative solution of linear systems.** Jammu. Dr R K Singh and Late Prof Y Prakash.

8. Dhanaraj, G. **Crystal growth and characterization of some non-linear optical materials: LAP, KTP and LiNbO_3 .** IISc.

9. Dubey, Vijay Kumar. **A study of some mechanical properties of GFRP composites.** Durgawati. Dr S C Dutt, Prof and Head, Department of Physics, Rani Durgawati Vishwavidyalaya, Jabalpur and Dr R K Bajpai, Department of Physics, Rani Durgawati Vishwavidyalaya, Jabalpur.

10. Garkari, Preeti. **Some aspects of wave in stabilities in solid state plasmas.** Vikram. Dr S K Ghosh, Asstt Prof, Department of Physics, Vikram University, Ujjain.

11. Ghorai, Snehalata. **Some studies on wave propagation in magnetized plasma.** Calcutta.

12. Gopala Krishna, B. **Influence of alkali metal dopants on superconductivity in Bi, Ca, Cu, O system.** Osmania.

13. Goswami, Ram Puri. **Development and study of designs of linear solar concentrators and selective coatings.** Jamia. Prof Z H Zaidi, Department of Physics, Jamia Millia Islamia, New Delhi and Dr G D Sootha, Department of Non-conventional Energy Sources, Ministry of Power and Non Conventional Energy Sources, New Delhi.

14. Goyal, Navdeep. **Electrical and photo electrical properties of some chalcogenide and chalcopyrite semiconductors.** Panjab.

15. Gupta, Ram Kumar. **Some studies on bipolar junction transistor, field effect transistor and metaloxide semiconductor field effect transistors at high frequencies.** Durgawati. Dr V K Farakya, Department of Physics, Rani Durgawati Vishwavidyalaya, Jabalpur.

16. Gupta, Vinod Kumar. **Theory of positron annihilation in solids and surfaces.** Vikram. Dr S B Shrivastava, Asstt Prof, Department of Physics, Vikram University, Ujjain.

17. Jain, Sandeep Kumar. **Investigation of electronic properties of thick films of semi crystalline organic and inorganic systems.** H S Gour. Prof A P Srivastava, Prof and Head (Retd), Department of Physics, Dr Hari Singh Gour Vishwavidyalaya, Sagar.

18. Jain, Shishir. **Luminescence of alkaline earth silicates.** H S Gour. Prof S Sivaraman, Department of Physics, Dr Hari Singh Gour Vishwavidyalaya, Sagar and Dr R K Pandey, Department of Physics, Dr Hari Singh Gour Vishwavidyalaya, Sagar.

19. Jain, V K. **Spectroscopic investigation of some carcinogenic polycyclic aromatic hydrocarbon molecules and their radical ions.** Jamia. Prof Z H Zaidi, Department of Physics, Jamia Millia Islamia, New Delhi.

20. Jha, Prafulla Kumar. **Dynamical properties of some uranium and rare-earth compounds.** Barkatullah.

21. Joy, M P. **Studies on integrability and chaotic behaviour of certain nonlinear systems.** CUST. Dr M Sabir, Prof, Department of Physics, Cochin University of Science and Technology, Kochi.

22. Kerur, Basavaraj Rachappa. **Studies in interactions of low energy photons with matter.** Karnatak. Shri S R Thontadarya, Reader, Department of Physics, Karnatak University, Dharwad.

23. Kher, Rajeev Shankar. **Studies on the impulsive excitation of mechanoluminescence in irradiated Ba, Sr, Ca and Pb doped LiF single crystals.** Ghasidas. Dr M S K Khokhar, Govt Science College, Bilaspur.

24. Krishnan, R. **Stereochemistry of 2' - 5' nucleic acids as revealed by the crystal structures of dinucleoside monophosphates.** IISc.

25. Laxminarsaiah, E. **Magnetic and superconducting properties of BiSeCo (2212) Y, Cd and Dy solid solutions.** Osmania.

26. Mathura Prasad. **Study of dielectric properties of KDP type ferroelectrics.** Garhwal. Dr B S Semwal, Birla College, Srinagar.

27. Mishra, Babaji Charan. **Feynman diagram approach to atomic and molecular collisions.** Utkal. Dr T Pradhan, Prof Emeritus, Institute of Physics, Utkal University, Bhubaneswar.

28. Mohd Shareefuddin. **Transport properties of potassium yttrium fluoride and sodium yttrium fluoride materials.** Osmania.

29. Moorthy Babu, S. **Growth, characterisation and kinetic of binary and ternary compounds by electrocrystallisation.** Anna.

30. Nandakumar, K. **Optical and thermal properties of selected ternary amorphous semiconductors.** CUST. Dr Jacob Philip, Prof, Department of Physics, Cochin University of Science and Technology, Kochi.

31. Rahangdale, Yuvraj. **Theoretical studies on the mechanoluminescence excitation in solids.** H S Gour. Prof S Sivaraman, Department of Physics, Dr Hari Singh Gour Vishwavidyalaya, Sagar and Prof B P Chandra, Department of Physics, Rani Durgawati Vishwavidyalaya, Jabalpur.

32. Ravi Chandra, G. **Effect of addition of Ag, Cd, Sn and Sb on the superconducting properties of the Bi (2223) system.** Osmania.

33. Singh, Narendra Prasad. **Electrical properties study on superionic conductor Cu₂HgI₄.** Magadh. Dr Narendra Singh, Department of Physics, Gaya College, Gaya.

34. Singh, Neorem Dhiren. **Study of electrical properties of thin alloy films.** Manipur. Prof H N K Sarma, Department of Physics, Manipur University, Imphal.

35. Subrahmanyam, R V. **Luminescence of silicates.** H S Gour. Dr S Sivaraman, Department of Physics, Dr Hari Singh Gour Vishwavidyalaya, Sagar and Dr R K Pandey, Department of Physics, Dr Hari Singh Gour Vishwavidyalaya, Sagar.

36. Upadhyaya, T C. **Theoretical study of order - disorder ferroelectric using Pauli operators.** Garhwal. Dr B S Semwal, Birla College, Srinagar.

37. Valsamma, K M. **Some aspects of nonlinear dynamics.** CUST. Dr K Babu Joseph, Prof, Department of Physics, Cochin University of Science and Technology, Kochi.

38. Venkata Narayana, M. **Thermally stimulated luminescence of gadolinium activated fluoro-perovskites.** Osmania.

Chemistry

1. Agrawal, Shuchita. **Study of some drug complexes of iron and cobalt.** H S Gour. Prof M S Kachhawaha, Department of Chemistry, Dr Hari Singh Gour Vishwavidyalaya, Sagar.

2. Agrawal, Suresh Chandra. **Oxidation of hydrocarbons using Fe (III) and Cr (VI) complexes as catalysts.** Jiwaji. Dr D D Agrawal, Department of Chemistry, Jiwaji University, Gwalior.

3. Ahmed, Mohammad Jameeludin. **Metal complexes of therapeutic agents.** Barkatullah.

4. Ashok Kumar. **Investigations on Bombay offshore crude oil bottom sludges.** Garhwal. Dr J C Rawat, Sri Guru Ram Rai College, Dehradun.

5. Awasthi, Vandana. **Synthetic and chemical studies of some nitrogen heterocycles.** Delhi.

6. Ayman Husein Amin Mahmoud. **Inhibition of acid corrosion of commercial-copper by acrylamide derivatives and its surface characterisation.** Delhi.

7. Bhyrappa, P. **Investigations on substituted porphyrin and its metal derivatives.** IISc.

8. Bisen, Ravi Kumar. **Studies on the effect of scheduling irrigation on growth and yield of banana, Musa paradisiaca.** Ghasidas. Dr S J Chhipre, C M Dubey Postgraduate College, Bilaspur.

9. Chakraborti, Pradip Kumar. **Studies on the interactions of metal ions with some modified peptide ligands.** Calcutta.

10. Chakravarty, Tarun. **Development of thermally stable chroma-free indigenous dispersants for drilling fluids from spent sulphite liquor.** Garhwal. Dr A P Gupta, D A V Graduate College, Dehradun.

11. Chary, M Thirumala. **Synthesis of 2- and 2, 3- disubstituted 1, 8-naphthyridines and their antimicrobial activity.** Kakatiya. Prof B Sreenivasulu, Department of Chemistry, Kakatiya University, Warangal.

12. Devika Rani, G. **Adsorption of electron acceptors on rare earth oxides.** CUST. Dr S Sugunan, Reader, Department of Applied Chemistry, Cochin University of Science and Technology, Kochi.

13. Doreswamy, R. **Interaction of chloro insecticide DDT and retinol on cellular metabolism in rats.** Bangalore. Prof U K Misra, Head, Department of Biochemistry, V P Chest Institute, University of Delhi, Delhi and Prof P S Veerabhadrappe, Department of Chemistry, Central College, Bangalore.

14. Dubey, Soma. **Mechanistic approach to the oxidation kinetics of monosaccharides by thallium (III) acetate.** Ghasidas. Dr V K Sharma, Head, Department of Chemistry, Govt Adarsh Science College, Rewa.

15. Garnaik, Bamakanta. **Synthesis of some thiazolidinones for pharmacological studies.** Sambalpur. Dr R K Behera, Reader, Post Graduate Department of Chemistry, Sambalpur University, Jyoti Vihar, Burla.

16. Gopal Reddy. **Studies on transition metal complexes with O, N and S donor ligands.** Osmania.

17. Goswami, Hanuman Sahay. **Characterization and catalytic behaviour of supported and unsupported ABO₃ type perovskites**

and mixed oxides in the oxidation of toluene. Jiwaji. Dr D D Agarwal, Department of Chemistry, Jiwaji University, Gwalior.

18. Gupta, Anita. Chemical control for improving specificity and selectivity in the analysis of sulphur and nitrogen containing organic compounds and drugs. Durgawati. Dr A Shrivastava, Department of Chemistry, Rani Durgawati Vishwavidyalaya, Jabalpur.

19. Gupta, Premilata. Vibrational spectra and conformational analysis of some polyatomic molecules. Devi Ahilya. Dr R Prasad, Department of Chemistry, Devi Ahilya Vishwavidyalaya, Indore.

20. Gupta, Sanjay Kumar. Transformation products of alantolides and their evaluation as plant growth regulators. PAU.

21. Handoo, Jyoti. Solid paraffins and their influence on the rheology of some Indian crudes. Garhwal. Dr K M Agrawal, Indian Institute of Petroleum, Dehradun.

22. Hans, Naresh. Synthetic studies in polyphenolics. Delhi.

23. Harpal Kaur. Photochemistry of inorganic complex compounds. Jamia. Prof S Iftikhar Ali, Department of Chemistry, Jamia Millia Islamia, New Delhi.

24. Jadhav, Rajendra Kumar. Distribution pattern of organophosphorous pesticides in various body tissues and fluids and its medicolegal significance. Barkatullah.

25. Jain, Rakesh Kumar. Studies on natural products. H S Gour. Dr S C Garg, Department of Chemistry, Dr Hari Singh Gour Vishwavidyalaya, Sagar.

26. Jain, Vinay Kumar. Voltammetric studies on some electrochemical and physico-chemical properties of some transition metals and rare earths. H S Gour. Dr K S Pitre, Department of Chemistry, Dr Hari Singh Gour Vishwavidyalaya, Sagar.

27. Jayasree, S. Synthesis and chemical characterisation of some biologically important complexes. Calicut. Dr K K Aravindakshan, Department of Chemistry, University of Calicut, Calicut.

28. Joshi, Kuncheria. Metal complexes of pyrazolones. Calicut. Dr K K Aravindakshan, Department of Chemistry, University of Calicut, Calicut.

29. Karthikeyan, A R. Studies on some new complexes of iron, cobalt, nickel and copper. CUST. Dr K K Mohammed Yusuff, Reader, Department of Applied Chemistry, Cochin University of Science and Technology, Kochi.

30. Kasturi, T R. Contributions in organic synthesis: Chemistry of carbocyclic, aromatic and heteroaromatic compounds. D.Sc. IISc.

31. Khullar, Alok. Studies on chemical and thermal reactions of isocyanates and related systems. Jiwaji. Dr D K Jaiswal, D RD E, Tansen Road, Gwalior and Dr (Smt) S Prabha, Prof and Head, Department of Chemistry, Jiwaji University, Gwalior.

32. Krishanani, Kishore Kumar. Hydrolysis mechanism and protonation behaviour of hydroxamic acids in acidic media. Ravishankar. Dr K K Ghosh, Lecturer, School of Studies in Chemistry, Pt Ravishankar Shukla University, Raipur.

33. Krishnan, K. Total synthesis of sesquiterpenes containing multiple quaternary carbons. IISc.

34. Malik, Suman. Kinetics of the oxidation of some organic substrates by quinquevalent Vanadium ion. Barkatulla.

35. Mandalik, Megha. Kinetics and mechanism of metal ion catalysed oxidation reaction with peroxodisulphate ion. Vikram. Dr S K Solanki, Asstt Prof, Department of Chemistry, Vikram University, Ujjain.

36. Mary, N L. Studies on transition metal complexes of schiff bases and related ligands. Calicut. Dr Geetha Parameswaran, Department of Chemistry, University of Calicut, Calicut.

37. Mathew, Suma K. Absorption spectral and comparative absorption spectral studies of lanthanide coordination complexes in solutions. Bhavnagar. Prof S N Misra.

38. Mishra, Deepti. Solution studies and isolation of alkali and alkaline earth metal complexes of non-cyclic polyethers. Vikram. Dr Uma Sharma, Prof, Department of Chemistry, Vikram University, Ujjain.

39. Mishra, Preeti. Synthesis and reaction kinetics of solvolysis of some substituted orthophosphate esters. Jiwaji. Dr (Smt) R Patil, Reader, Department of Chemistry, Jiwaji University, Gwalior.

40. Mishra, Sandhya. Chemical and antimicrobial studies of plant products and other organic compounds. H S Gour. Dr J T Rao, Department of Chemistry, Dr Hari Singh Gour Vishwavidyalaya, Sagar.

41. Muraleedharan, K. Thermal behaviour of potassium metaperiodate. Calicut. Dr M P Kannan, Department of Chemistry, University of Calicut, Calicut.

42. Nalini, G. Theory of electrochemical electron transfer. CUST. Dr K L Sebastian, Prof, Department of Applied Chemistry, Cochin University of Science and Technology, Kochi.

43. Nayyar, Kaushal. Isolation, transformation, synthesis and screening to search out some growth regulating organic compounds. PAU.

44. Pandey, Indresh Kumar. Synthesis and characterisation of coordination complexes of Cu(II), Ni(II) and Co(II) with nitrogen containing ligands. H S Gour. Dr Gopal Narain, Department of Chemistry, Dr Hari Singh Gour Vishwavidyalaya, Sagar.

45. Pandey, Vijaylaxmi. Synthesis of some azlactones and acid-hydrazones and their possible applications. Jiwaji. Prof V S Jolly, G-24, Gandhi Nagar, Gwalior.

46. Pardasani, Harash Kumar. Synthetic and electrochemical studies on some pyrimidine and pyrazole derivatives of sulphonamides. Jiwaji. Dr R Jain, Department of Chemistry, Jiwaji University, Gwalior.

47. Pradhan, Alka. Synthetic approach to potential anticancer agents. Jiwaji. Dr V S Jolly, B-24, Gandhi Nagar, Gwalior.

48. Prakash Rao, Ch. Chemical constituents of *Milletia racemosa* and synthesis of pyrano and furano coumarins of biological interest. Osmania.

49. Qureshi, Rafat. Solution studies and isolation of alkali and alkaline earth metal complexes of non-cyclic oxocrowns. Vikram. Dr Uma Sharma, Prof, Department of Chemistry, Vikram University, Ujjain.

50. Rajendran, M. Low temperature synthesis and characterization of fine particle perovskite oxides and structurally related mixed metal oxides: Studies on zirconates, titanates and cuprates. IISc.

51. Rama Devi, K. Studies directed towards the synthesis of antitumoural and antitumour compounds. Osmania.

52. Rastogi, Rachana. Synthesis, characterization and catalytic behaviour of ruthenium complexes. Jiwaji. Dr D D Agarwal, Department of Chemistry, Jiwaji University, Gwalior.

53. Rastogi, Soni. A study of some chemical constituents of some medicinal and non-medicinal plants. Delhi.

54. Ratna. A study of the interaction of cibacron blue and some of its fragments and analogues with basic polypeptides and human serum albumin. Delhi.

55. Ravidranath, M. Studies on fulvene cycloadditions and in optical revolutions. IISc.

56. Rawat, S S. Studies of causes of corrosion by sub-hydrostatic drilling fluids in oil industry and their control. Garhwal. Dr A P Gupta, D A V Post Graduate College, Dehradun.

57. Renu S. L-glutaminase production by marine bacteria. CUST. Dr M Chandrasekharan, Head, Centre for Biotechnology, Cochin University of Science and Technology, Kochi.

58. Rohan, Yadendra. Characterization of some pollution parameters in water samples. H S Gour. Dr K S Pitre, Department of Chemistry, Dr Hari Singh Gour Vishwavidyalaya, Sagar.

59. Sahay, Abhay Nand. Physico-chemical studies on some organometallic compounds of platinum metals. Magadh.

60. Sahu, Benudhar. Studies on kinetics of some bromination and oxidation reactions. Sambalpur. Dr H P Panda, Lecturer, Department of Chemistry, M P C College, Baripada.

61. Sarat Chandra Babu, Mukkamala. Effect of denaturants on complex equilibria of some biologically important transition metal ions with L-ornithine and L-glutamic acid: A computer augmented modelling study. Andhra.

62. Sekhar, A. Synthesis of some biological active compounds. Osmania.

63. Shamsi Pervez. Study of geo environmental impacts of some industrial wastes. Ravishankar. Dr G S Pandey, Reader, School of Studies in Chemistry, Pt Ravishankar Shukla University, Raipur.

64. Sharma, Archana. Utilisational *simmondsia chinensis* Linn *Schneider Jajoba* as source of speciality chemicals. Garhwal. Dr V K Bhatia, Indian Institute of Petroleum, Dehradun.

65. Sharma, Brij Mohan. Studies on the air pollution level of Doon Valley and scrubbing of gaseous pollutants with mineral ion exchangers derived from bentonite. Garhwal. Dr H D Taval, D A V Post Graduate College, Dehradun.

66. Sharma, Mamta Vijay. Kinetic study of some substituted thio-phosphates leading to its mechanism. Jiwaji. Dr (Smt) R Patil, Reader, Department of Chemistry, Jiwaji University, Gwalior.

67. Sudheer Kumar. Oxidation of some organic compounds by tetravalent tridium: A kinetic study. Osmania.

68. Swapna, G V T. Studies in high-resolution multi-dimensional nuclear magnetic resonance spectroscopy. Osmania.

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71. Vaishnav, Madan Murari. Search for antidiabetic agents of plants origin. Ghasidas. Dr K R Gupta, Prof, Govt T C L College, Jajgir.

72. Venugopalan, P. Structure-reactivity correlations of photochemical and thermal reactions in the solid state. IISc.

73. Vijayadamodar, G V. Theoretical studies on the orientational relaxation in pure and binary liquids and contributions to the problems of electrostriction and crystal growth. IISc.

Earth Sciences

1. Arora, Paramjyoti. Hydrochemical and hydrogeological studies of Faridkot and adjoining areas in Punjab State, India with special reference to environmental problems. Panjab.

2. Ashok Kumar. Lower palaeozoic biostratigraphy of parts of Zaskar Basin. Jammu. Dr S K Shah, Prof, Department of Geology, University of Jammu, Jammu.

3. Banerjee, Amit. Foraminiferal study of Tanot-I well section: Contribution to the paleogene biostratigraphy, biochronology and sequence stratigraphy of Jaisalmer Shelf, Rajasthan. Delhi.

4. Baronia, Rajesh Kumar. Geology and geohydrological studies in Pench Valley Area, District Chhindwara, M P. H S Gour. Dr D P Khare, Department of Applied Geology, Dr Hari Singh Gour Vishwavidyalaya, Sagar.

5. Bhuvanendra Kumar, D V S N. Petrology, origin and deposition of the Sullavai Sandstone in the Pakhal Basin, A P. Osmania.

6. Bodhankar, Ninad. Perspective analysis of hydrogeologic condition of the Ammer River Basin, District Rajnandgaon, M P. Ravishankar. Dr U C Singh, Reader and Head, School of Studies in Geology, Pt Ravishankar Shukla University, Raipur.

7. Ganga Rao, Bodda Surya. Mineralogy, geochemistry P-T-X relations and tectonics of sapphirine granulites from parts of Eastern Ghats, India. Andhra.

8. Jamwal, Man Mohan Singh. Petrological study of a part of Piparan Granite, North of Doda, Jammu Himalaya. Jammu. Dr B L Dhar, Reader, Department of Geology, University of Jammu, Jammu.

9. Krishna Kishore, Bunga. Geology, geochemistry and genesis of the Nishikal and Kuttingi manganese ore deposits of Koraput District, Orissa, India. Andhra.

10. Mittal, Sushil Kumar. A study of hydrogeology of the Sirhind Canal Tract, Punjab State, India with reference to the ecosystem. Panjab.

11. Nagendra Prasad. Study of quaternary sediments along Bhagirathi River between Manari and Ganganani Area, District

Uttarkashi, Garhwal Himalaya. Garhwal. Dr G S Rawat, Birla College, Sringer.

12. Sahni, Ashok Kumar. **Revision of the family ptychopariade from the cambrian of India.** Jammu. Dr S K Shah, Prof, Department of Geology, University of Jammu, Jammu.

13. Srinivas, M. **Comprehensive petrological and geochemical studies on the subalkaline, and alkaline intrusives of Guntur and Prakasm Districts of A P.** Osmania.

14. Subrahmanyam, Vandrapu. **Structure and tectonics of part of Western continental margin of India between Marmagao and Kasaragod from geo-physical investigations.** Andhra.

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16. Thara, K G. **Metamorphism and tectonic evolution of a segment of Palghat Gap, Kerala.** CUST. Dr K Soman, Scientist-E, Centre for Earth Science Studies, Thiruvananthapuram.

17. Tripathi, Beena. **Structural and matamorphic history and tectonic framework of the Salkhala group in Ramban - Doda area of Kashmir.** Garhwal. Dr. V C Thakur.

18. Umak, Sandhya. **Study of geology and geomorphic evolution of land forms around Chikhaldga Gawilgarh Region of Amravati District, Maharashtra.** Vikram. Dr R R Nandgavankar, Vice Chancellor, Vikram University, Ujjain.

19. Venkat Reddy, S. **Environmental geology of Kothagudem Coal Fields, A P with special reference to mine water pollution.** Osmania.

Engineering & Technology

1. Abratham, Daniel. **Studies on LDPE/LLDPE blends.** CUST. Dr D Joseph Francis, Prof and Head, Department of Polymer Science and Rubber Technology, Cochin University of Science and Technology, Kochi.

2. Balani, Laxman Das. **Vibration analysis of circular discs.** Barkatullah.

3. Bandyopadhyay, Dhananjay. **Studies on non-conventional vulcanisation systems of polychloroprene rubber compounds.** Calcutta.

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15. Mehta, Kapil Deo. **Studies into the bioleaching on zinc from the tailings of the concentrator plant of Rajpura Dariba Mine, Hindustan Zinc Limited.** ISM. Dr T Sharma, Department of Fuel and Mineral Engineering, Indian School of Mines, Dhanbad and Dr D n Thakur, Central Mining Research Institute, Dhanbad.

16. Murthy, B S. **Study of amorphous phase formation by mechanical alloying in Ti based systems.** IISc.

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18. Ojha, Shankarlal. **Application of optimization techniques to some problems in mechanical design.** Vikram. Dr S B L Vyohar, Department of Mechanical Engineering, Govt Engineering College, Bilaspur.

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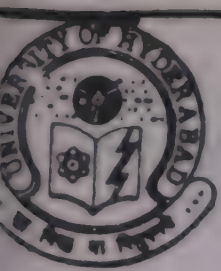
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7. TECHNICAL OFFICER (SAP Physics)	1	-	-
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Scale of pay and gross emoluments at the minimum of the scales are as follows :

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1	Rs. 4500-150-5700-200-7300	8,805-00
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The prescribed application form and particulars of qualifications, experience etc., can be had either in person from the Recruitment Section, Administration Building, University Campus in Gachibowli, Hyderabad - 500 134 by paying Rs. 10/- for one set of application form or by post, by sending a requisition and a self addressed envelope of the size of 20 cm x 30 cm to Section Officer (Recruitment Section), University of Hyderabad, Gachibowli, Hyderabad - 500 134 accompanied by a crossed demand draft for Rs. 15/- drawn in favour of the Finance Officer, University of Hyderabad on State Bank of India, or Andhra Bank payable at Hyderabad so as to reach him by 10.03.1993. Separate applications are to be submitted for the post of Deputy Registrar/Dy. Finance Officer/Asstt. Registrar/Asst. Finance Officer, etc.

The last date for receipt of applications duly filled in is 19th March, 1993.

Hyderabad

Date : 18.02.1993

REGISTRAR

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1. **M.I.B. :** A recognised Bachelor's or Post-graduate degree in any discipline with atleast 50 percent marks in the aggregate; Or Chartered Accountant/Cost and Works Accountant/Company Secretary/AMIE.
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NOTE :

- (a) Candidates appearing in final degree Examination in April/May, 1993 are eligible to apply and can take the test provisionally.
- (b) Reservations as per approved norms provided they satisfy the Selection Criteria.
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Admission will be made on the basis of Test/Interview. All eligible candidates will take a Written Test to be held at different Centres in India on **Sunday April 25, 1993.**

Application Form and Information Brochure giving details are available at the office of the Department between 2.00 p.m. and 5.00 p.m. on all working days upto **March 22, 1993** on submission of crossed Bank Draft for Rs. 120/- for one course; and Rs. 150/- for more than one IN FAVOUR OF REGISTRAR, PANJAB UNIVERSITY, CHANDIGARH. To obtain them by Post, please write to : The Deputy Registrar, Department of Commerce and Business Management, Panjab University, Chandigarh-160 014, enclosing the Bank Draft and a self addressed envelope (29 x 18 cms.) bearing Rs. 6 stamps by **March 18, 1993.**

Last date for receipt of completed application forms is **March 25 1993** upto 5.00 p.m.

IMPORTANT ANNOUNCEMENT

Applicants who wish to be enrolled for Ph.D Programme in the Faculty of Business Management and Commerce may apply to the Department by June 30, 1993 on the prescribed form available with the University Cashier on payment of Rs. 10/-. Requests for supply of enrolment form by registered book post be addressed to **Secretary, Publication Bureau** by enclosing a Bank Draft for Rs. 20/- in favour of **REGISTRAR, PANJAB UNIVERSITY, CHANDIGARH.**

MINISTRY OF HUMAN RESOURCE DEVELOPMENT (ES 4 SECTION)

COMMONWEALTH SCHOLARSHIP PLAN NEWZEALAND AWARDS 1994

Applications on plain paper as per prescribed format are invited from Indian Nationals for the above mentioned Commonwealth Scholarships for higher studies/research in Newzealand.

1. NEWZEALAND :

Number of Scholarships - Three

Subject Field :

(a) Soil Science (b) Dairy Technology (c) Geo-Thermal Technology.

MINIMUM QUALIFICATIONS REQUIRED : A first class Master's Degree in the subject or allied Fields (Applicant should have completed the relevant qualification within the last five years preceding the year of the application i.e., those obtained Master's Degree in the year 1987 and before are not eligible to apply.

ESSENTIAL EXPERIENCE : At least 2 years (a) teaching/research or practical experience on 31st December, 1992 after acquiring the qualifications prescribed above.

AGE : Below 35 years as on 1st August, 1993 (Preference will however be given to the candidates in the age group of 26-35 years.). Two years Relaxation in age will be given to the candidates belonging to SC/ST candidates other things being equal.

VALUE : (a) Travel to and from Newzealand by Air-passage by economy class as arranged by the authorities of the donor country (No provision has been included for the expenses of the dependents). (b) Expenditure on board and lodging, books and other study material, tuition fee, internal travel related to the studies and Medical care will be met by the Newzealand Government.

N.B. : 1. Only candidates with 60% of marks and above at the above prescribed qualification are eligible. Where grades are mentioned the candidates must indicate the conversion formula adopted by the University/Institution and should also indicate equivalent percentage of marks. 2. Equivalent foreign degrees will be considered. 3. Each application must be accompanied by attested copies of (a) Certificate of age (b) Marks-sheet of the qualifying Examination (c) All degree/diplomas/certificates. 4. Candidates who have already been abroad for study/training/specialisation either on Scholarship or on their own for a period exceeding six months are eligible to apply only if they have been in India for at least two consecutive years after their return from abroad. 5. Applications in the subject field other than those specified above will not be considered. 6. Applications of candidates who are abroad will not be considered. 7. Candidates must furnish a clear and precise programme of study/research (minimum 500 words). 8. Those who have already done Ph.D. in India or abroad need not apply. 9. Candidates who do not possess the requisite qualifications need not apply. 10. Candidates should have adequate knowledge of Geographical situation, cultural heritage of India and the Donor Country. 11. Documents submitted alongwith the applications will not be returned. Hence candidates are advised to send only the photocopies of the certificates, etc. duly attested. 12. Since, these Scholarships are offered by Foreign Governments, applications should invariably be submitted in English only. 13. Experience has to be supported by documentary evidence. 14. Candidates who have applied more than twice and were not selected for nomination are not eligible to apply. 15. Employed candidates must send their applications through their employers with a 'No Objection Certificate'. They will not be called for interview unless the certificate is forwarded with the application. Application through proper channel should also reach this office by the last date fixed for the purpose. 16. Mere fulfilment of requirements as laid down in the advertisement does not qualify a candidate for interview. Interview letters in a particular subject are sent only to the best candidate in order of merit after their applications are judged by a duly constituted Selection Committee of Experts. 17. Applications received after the prescribed date and incomplete applications will not be entertained. 18. Canvassing in any form will be a disqualification. 19. The Selection Committee's decision about candidate for Interview or selecting a candidate for nomination will be final. **NO REPRESENTATIONS IN THIS REGARD WILL BE ENTERTAINED.**

LAST DATE : The candidates should apply for the above scholarship on plain paper (preferably typewritten) with a recent passport size photograph duly affixed, furnishing the details/particulars in the given

format to the Under Secretary, External Scholarship Division (Section ES.4) Department of Education, A-1/W-3 Curzon Road Barracks, Kasturba Gandhi Marg, New Delhi-110001 by March 31, 1993. Applications received late will not be entertained.

PROFORMA FOR APPLICATION

1. Name of the Scholarship Scheme :
2. Subject :
3. (i) Name of the candidate :
(in Block letters) with full mailing address.
(ii) Full name of Father/Mother/Guardian
(iii) Marital Status
4. Date of birth and the State to which the Candidate belongs
5. Whether Member of SC/ST (A certificate from the competent authority should be attached).
6. Academic record starting from High School/Higher Secondary (Attested/Photostat copies of Certificates to be attached).

Recent Passport Size photograph duly signed to be pasted here. Without photograph application will be considered incomplete

Name of the University/Board/Instt.	Examination(s)	Year of passing	Division/class with position, if any (In case no class is awarded and only grading is done the conversion formula may be mentioned)	Percentage of marks obtained and position if any.	Subjects taken.

7. Details of professional practical training and research experience specifying the period and number of papers published/previous employment with name and date of employment if any.
8. Nature of the present employment with name and date of appointment/designation and the name and address of the employer.
9. Have you been abroad? If so give full particulars of the country visited and the period of stay. Also mention the date, month and year of return to India (purpose of visit also to be indicated).
10. Proposed programme of study/research and training specifying.
 - (i) The work at present engaged in :
 - (ii) Nature and Programme of Study research/training desired.
 - (iii) Future plans/prospect after the proposed studies/research training and
 - (iv) How are these related to the advancement of knowledge of Science and Technology in India.

Place :

Date :

Signature of candidate

NOTE : Employed persons must send their applications through proper channel. However advance applications will be considered provisionally pending sponsorship by employers provided attested copies of certificates of age and qualifications are attached to advance copy of the applications.

davp 92/639



No.KU BOA/ADVT/92-93/8940

DATE: 5-2-1993

ADVERTISEMENT

Applications (Eight Sets) in the prescribed forms are invited for the below mentioned posts in the Post-Graduate Departments, K. U. Dharwad/ Karwar and Constituent Colleges of Karnatak University, Dharwad so as to reach the 'REGISTRAR, KARNATAK UNIVERSITY, DHARWAD' on or before 22nd March, 1993, by Registered Post A.D. from duly qualifying Candidates of Indian Nationality.

A set of eight (8) prescribed application forms and the Instruction Sheet can be had from the 'DIRECTOR, PRASARANGA, KARNATAK UNIVERSITY, DHARWAD-3' in person on presentation of cash challan for having credited the amount of Rs. 32/- to the State Bank of India, K.U. Campus, Dharwad, or by post duly sending a self addressed 28 X 12 Cms. stamped (Rs. 5/-) cover alongwith a crossed Bank Demand Draft for Rs. 32/- payable to the 'Finance Officer, Karnatak University, Dharwad.

Those candidates who had already submitted their applications for the following posts in response to the earlier Advertisements of this University, should necessarily apply afresh.

For appointment to the post of Lecturer, the candidate must have obtained 55% marks at Master's Degree in the relevant subjects or its equivalent grade and good academic record.

Details of Vacant Posts with reservations:

Name of the Departments and Posts.	No. of Posts Vacant	Reservation
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P.G. DEPARTMENTS DHARWAD/KARWAR.

SANSKRIT. READER.	1	ST Backlog.
ENGLISH READER	1	SC Backlog.
FRENCH LECTURER	2	1-SC 1-ST Backlog.
ECONOMICS PROFESSOR		
(Economic Theory/ Econometrics).	1	ST Backlog.
POLITICAL SCIENCE. LECTURER.	1	GROUP-C
(Ambedkar Studies)		
PHILOSOPHY READER	1	ST Backlog.
EDUCATION. LECTURER	1	SC Backlog.

LECTURER (Experimental)	1	ST Backlog.
MUSIC LECTURER (Vocal)	1	GROUP-A
COMMERCE READER		
(Cost Accountancy)	1	SC
LAW LECTURER		
(Jurisprudent/ Criminal Law)	1	SC Backlog.
LECTURER READER	1	SC Backlog.
(Labour Law)	1	GM
STATISTICS. LECTURER	1	SC Backlog.
BOTANY. PROFESSOR	1	SC Backlog.
CHEMISTRY. PROFESSOR	1	SC Backlog.
(Physical) MARINE BIOLOGY		
LECTURER	2	1-SC, 1-ST Backlog
GEOLOGY PROFESSOR	1	SC
COMPUTER SCIENCE LECTURER	2	1-ST Backlog. 1-Group-A
PROFESSOR	1	UNRESERVED.

CONSTITUENT COLLEGES

PHILOSOPHY LECTURER	1	SC Backlog.
EDUCATION LECTURER	1	SC Backlog.
LAW LECTURER	2	1-SC Backlog. 1-ST Backlog.
STATISTICS LECTURER	1	SC Backlog.
GEOLOGY LECTURER	1	ST Backlog.
PHYSICS LECTURER	1	ST Backlog

Scale of Pay in the Post-Graduate Department & Constituent Colleges:

1.Professor	Rs.4500-150-5700-200-7300	With usual
2.Reader	Rs.3700-125-4950-150-5700	allowances
3.Lecturer	Rs.2200-75-2800-100-4000	admissible
		as per University
		Rules from
		time to time.

Knowledge of Kannada is desirable for all the posts:

Qualifications for the post of Professors.

An eminent scholar with published work of high quality actively engaged in research with 10 years of experience in postgraduate teaching and/or research at the University/ National level Institutions, including experience or guiding

research at doctoral level.

OR

An outstanding scholar with established reputation who has made significant contribution to knowledge.

Candidate should have guided atleast one student for Ph.D and that the student should have actually obtained the Ph.D. before the prescribed date in the advertisement.

Professor in Computer Science:

- 1) Ph.D. in Computer Science/Engineering with a First class Degree at Masters level (Computer Science).
- ii) Minimum of 10 years teaching/research experience with atleast five years as an Assistant Professor in an established University /College.
- iii) Knowledge of System Design/Data Structures/ Artificial intelligence is required.

Qualifications for the post of Reader:

Good academic record with a doctoral degree or equivalent published work. Candidates from outside the University system in addition shall also possess atleast 55% marks or an equivalent grade at the Master's degree level.

Eight years experience of teaching and/or research including upto 3 years for research degrees and has made some mark in the areas of scholarship as evidenced by quality of publications, contribution to educational renovation, design of new courses and curricula.

Qualifications for the Post of Lecturer:

Art, Science, Social Sciences, Commerce, Education, Foreign Languages and Law.

Good academic record with atleast 55% marks or an equivalent grade at Master's degree level in the relevant subject from an Indian University or an equivalent degree from a Foreign University.

Candidates besides fulfilling the above qualifications should have cleared the eligibility test for Lecturers conducted by UGC, CSIR or similar test accredited by the UGC.

Lecturer in Music:

Good academic record with atleast 55% marks or an equivalent grade at Master's degree level in relevant subject or an equivalent degree from an Indian/Foreign University.

Candidates besides fulfilling the above qualifications should have cleared the eligibility test for Lecturers conducted by UGC, CSIR or similar test accredited by the UGC.

OR

A traditional or a professional artist with a highly commendable professional achievement in the subject concerned.

Lecturer in Computer Science:

- a) i) M.Tech. Computer Science
OR
- ii) M.Sc. in Computer Science. 1st or Higher
OR Second Class
more than 55% marks.
- iii) Master of Computer Application (MCA)
(The later two courses should be of minimum 2/3 years duration)
OR
- iv) Ph.D. in applied

Mathematics with a minimum of 3 years of teaching Computer Science at B.Tech. MCA. level

- b) Experience in Programming/ handling of Computers or teaching at degree/P.G. Diploma level, for persons covered under (a) (i) 2 years of experience in the above for persons covered under (a) (ii) & (iii).

Candidates who have passed the ELIGIBILITY TEST and other similar test accredited by the U.G.C. for recruitment to the post of Lecturer, should necessarily enclose the Certificate to that effect alongwith the application forms.

The candidates belonging to the following categories are exempted from clearing the Lectureship Eligibility Test provided they possess a minimum of 55% marks at Master's Degree level:

- 1) Those who have passes the NET Examination conducted jointly by the CSIR-UGC for Junior Research Fellowship Award;
- 2) Those who have been awarded M.Phil. Degree upto the 31-3-1991; and
- 3) Those who have already been awarded Ph.D. Degrees upto 31-12-1992.

Appointment to the posts may be permanent, depending upon the nature of the vacancy and the requirements of the University. In such cases, they will be on probation for one/two years according to the rules of the University.

Candidates selected for the above said posts, may be posted in the beginning or at a later date to work either at Dharwad or at any of the P.G. Centre(s) though the posts are shown as existing at a particular place at the time of advertisement.

As per Government Order No. DPAR 28 SBC 86 dated 12-12-1986 and G.O.No. SWL 15 BPS 85 dated 17-10-1987 applicant belonging to Scheduled Caste/Scheduled Tribe (Form-1), Group-A (Form-2) Group-B, Group-C, Group-D (Form-3) and Group-E (Form-4) are required to produce the copies of Declaration Certificates in the prescribed form for employment purpose issued by the authorities empowered to issue such Certificates in support of their claims and the copies of School Leaving Certificates alongwith their applications. Such certificates should not have been issued earlier then one year by the concerned authorities empowered to do so.

In addition to the posts reserved for Scheduled Caste and Scheduled Tribe preference shall also be given to persons belongs to Scheduled Caste/ Scheduled Tribe in respect of even the vacancies not reserved for them, if in the opinion of the Board, such persons possess suitable qualifications.

The entitlement of a person to be eligible for appointment against the quota other Backward Classes shall be determined not just on the basis of caste certificate but rather on basis of a Caste-cum-income Certificate, which would include income of his own together with that of his parents and if either of the parent is dead, of his legal guardian.

When the vacancies are reserved for GROUP-A, GROUP-B, GROUP-C, GROUP-D & GROUP-E and the candidates belonging to this Groups are not available the vacancies so reserved shall be filled by Selection of candidates belonging to General Merit.

Sympathetic view will be taken for recruitment of Physically Handicapped persons for suitable appointments provided they fulfill the prescribed qualifications and conditions, subject to production of authentic certificate issued by the competent medical authorities.

in order as required, failing which their applications will be rejected and no further correspondence will be entertained.

Special Attention:

- 1) incomplete applications will not be considered for the post applied for.

Other details such as (Qualifications in detail, good academic records, guidelines and instructions) can be seen in the instructions sheet obtained along with the set of application forms.

Candidates should enclose the necessary documents as mentioned in the applications and also in support of qualifications/ teaching/ research experience / publications/claiming the benefit of reservation etc.,

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REGISTRAR.

KARNATAK UNIVERSITY, DHARWAD.

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JAWAHARLAL NEHRU UNIVERSITY, NEW DELHI

ANNOUNCEMENT FOR ADMISSION-1993-94

The University will hold Entrance Examination for admission to various programmes of study at the following 25 Centres on May 20, 21 and 22, 1993.

Ahmedabad, Bangalore, Baroda, Bhubaneshwar, Bombay, Calcutta, Chandigarh, Cochin, Danapur Cantt. (Bihar), Dehradun, Delhi, Gauhati, Hyderabad, Indore, Jaipur, Jammu, Lucknow, Madras, Madurai, Patna, Pune, Ranchi, Shillong, Varanasi and Vijayawada. (The University reserves the right to change centre of examination without assigning any reasons.)

SCHOOLS AND PROGRAMMES OF STUDY

I. SCHOOL OF INTERNATIONAL STUDIES

(i) **M. Phil/Ph.D.** in International Politics, Organisation, Disarmament & Political Geography; Diplomatic Studies, International Legal Studies, International Trade and Development; South Asian, Central Asian, Southeast Asian & Southwest Pacific Studies; Japanese and Korean Studies; West Asian, North African and Sub-Saharan African Studies; American, Latin American & West European Studies and Soviet & East European Studies.

(ii) **M.A. in Politics (International Studies)**

II. SCHOOL OF LANGUAGES

(i) **M.Phil/Ph.D.** in French, German, Modern Arabic, Russian, Hindi, English, Linguistics including Semiotics, Spanish and Urdu and Ph.D. in Japanese, Chinese, Persian and Modern Western Philosophy.

(ii) **M.A. in English, Linguistics, Hindi, Urdu, Persian, Arabic, Chinese, Japanese, French, German, Russian and Spanish.**

(iii) **B.A. (Honours)** in Persian, Modern Arabic, Chinese, Japanese, French, German, Russian and Spanish (with entry points both in 1st and 2nd year). Students successfully completing the 3-year B.A. (Hons). become eligible to seek registration to M.A. in the respective language as at (ii) above.

III. SCHOOL OF SOCIAL SCIENCES

(i) **M.Phil/Ph.D.** programme is offered by following Centres which have their curricular and research work organised on inter-disciplinary basis with a focus on some major problems of study.

Centres : Economic Studies and Planning Historical Studies, Political Studies, Regional Development (Geography, Economics, Population Studies), Social Systems (Sociology), Educational Studies (Psychology, Sociology, Economics and History of Education), and Social Medicine & Community Health.

(ii) **Master of Community Health (MCH/Ph.D.):** Candidates holding MBBS with one year's experience after internship or Master's degree in Nursing with one year's experience in Community Health in Nursing.

(iii) **M.A. in Economics, Geography, History, Political Science & Sociology.**

IV. SCHOOL OF LIFE SCIENCES

(i) **M.Phil/Ph.D.** in areas of interdisciplinary research; Genetic Engineering, Molecular Biology and Genetics, Biochemistry, Plant and Animal Tissue Culture, Development Biology, Cell Biology, Immunobiology, Neurobiology, Microbiology, Radiation and Cancer Biology, Biophysics, Photobiology, Bioenergetics Membrane-Biology, etc.

(ii) **M.Sc. in Life Sciences :** Open to candidates from both Biological and Physical Sciences.

V. SCHOOL OF ENVIRONMENTAL SCIENCES

(i) **M.Phil/Ph.D.** in interdisciplinary areas of Environmental Sciences including Biology and allied fields, Chemistry, Geology and Physics.

(ii) **M.Sc. in Environmental Sciences :** An Interdisciplinary course with Physical, Biological, Earth Sciences and Pollution Studies.

VI. SCHOOL OF COMPUTER & SYSTEMS SCIENCES

(i) **M.Phil/Ph.D. & M.Tech./Ph.D.:** The School offers academic programmes leading to the degrees in diversified areas of Computer Science & Technology.

(ii) **Master of Computer Applications (MCA) :** 3-year programme opened to candidates with adequate competence in Mathematics.

VII. SCHOOL OF PHYSICAL SCIENCES

(i) **Ph.D.** in Physical Sciences research and teaching in border line areas of Physics & Chemistry, the emphasis being on topics of Chemical Physics, Condensed Matter Physics, Non-equilibrium Statistical Mechanics, Stochastic Processes & Nonlinear, Dynamics. Experimental areas include magnetism, Nonlinear optics and Light Scattering.

(ii) **M.Sc. in Physics :** Open to candidates who have B.Sc. in Physics, Chemistry or Mathematics.

VIII. CENTRE FOR BIOTECHNOLOGY

Ph.D. Research Areas : Plant Molecular Biology; Protein Engineering; Genetic Engineering related to Nitrogen Fixation; Molecular Basis of Infectious Diseases; Molecular Immunology; Protein Stability; Conformation & Folding and Bioprocess Optimisation.

RESERVATION OF SEATS : 22.5% (15% for SC and 7.5% for ST) and 3% seats are reserved for SC, ST and Physically Handicapped candidates respectively.

HOW TO APPLY

Application form together with detailed instructions including eligibility conditions can be had either personally on cash payment of Rs. 20/- per set between 9.30 A.M. to 12.30 P.M. & 2.00 P.M to 5.00 P.M on all working days (Monday to Friday) or by post by sending crossed Indian Postal Order for Rs. 40/- payable to JAWAHARLAL NEHRU UNIVERSITY, NEW DELHI for one set of form and postage alongwith a self-addressed unstamped envelope of 28 cms x 20 cms size to THE DEPUTY REGISTRAR (ADMISSIONS), JAWAHARLAL NEHRU UNIVERSITY, NEW DELHI-110067. A maximum of two additional forms of same level of programme @ Rs. 5/- each can be had with one Instruction Booklet. Money Orders are not accepted. There being different forms and Instructions Booklet for different level of programmes i.e. (i) M.Phil/Ph.D., M.Tech/Ph.D. & M.C.H./Ph.D.; (ii) M.A./M.Sc./M.C.A.; and (iii) B.A. (Hons) in Foreign Languages, candidates should clearly indicate in their request as well as on the top of the self-addressed envelope the name of the programme for which the form and Instruction Booklet is required. A candidate can apply for more than one programme by filling up separate application form for each programme.

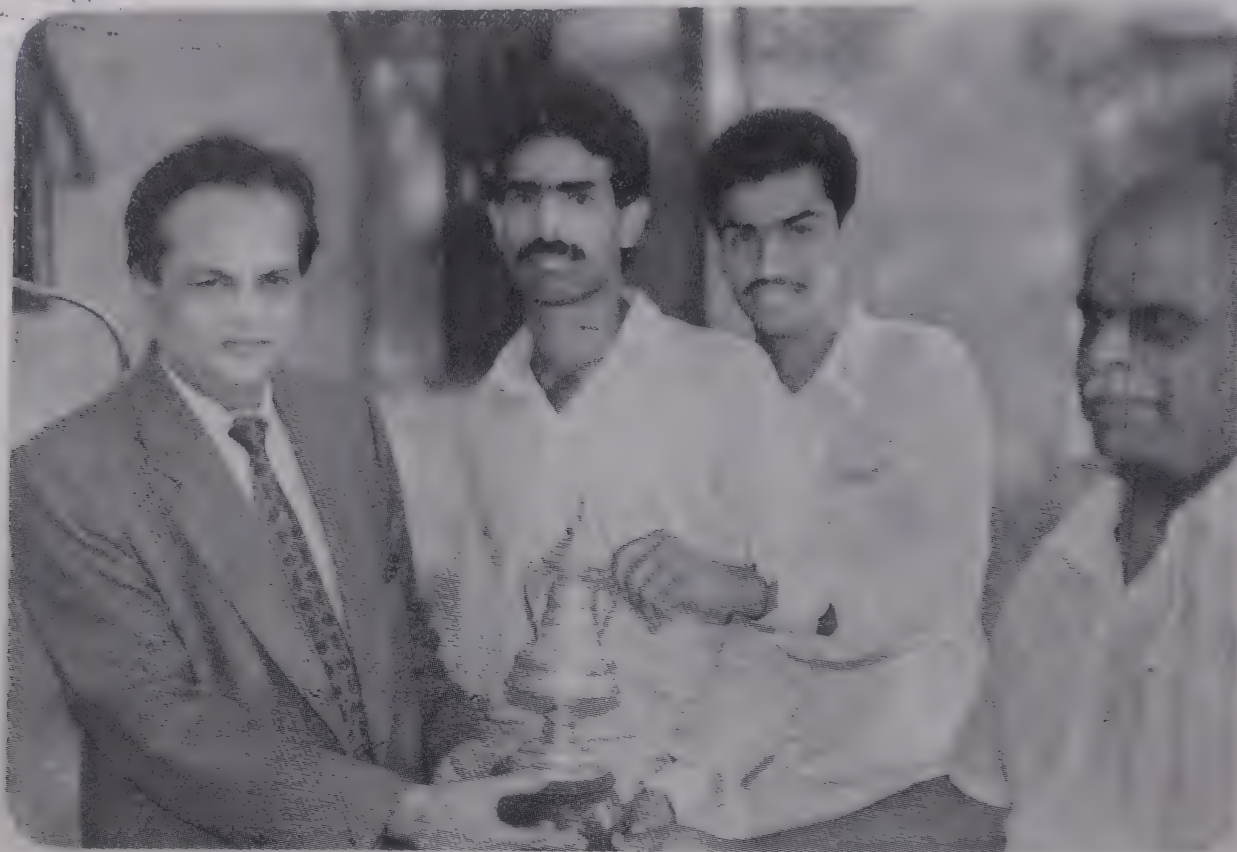
ISSUE OF FORMS : FEBRUARY 10 ONWARDS; & UPTO MARCH 29, 1993 (IN PERSON) ; AND MARCH 24, 1993 (THROUGH POST).

LAST DATE FOR RECEIVING COMPLETED FORMS : APRIL 2, 1993.

NOTE : 1. Candidates who are due to appear in the respective qualifying examination prescribed for eligibility for admission to a particular programme are also eligible to sit in the entrance examination as per conditions laid down in the Instruction Booklet.

2. Announcement for admission to Direct Ph.D. Programmes and Part-Time (Foreign Languages) courses will be notified separately in May, 1993.

VIZZY TROPHY



Shri Ashok Kumbet, Treasurer, Tamil Nadu Cricket Association, presenting the trophy to the winning team.

YOUTH FESTIVAL



Folk Dance by Chaudhary Charan Singh Haryana Agricultural University, Hisar.

University News

U.P.T.E.L. MADRAS

MONDAY, MARCH 8, 1993

Rs. 5.00

Cochin Varsity Convocation



From L to R : Prof E.C. George Sudarshan, an eminent scientist, who was conferred the degree of Doctor of Science (Honoris Causa) at the special convocation of the Cochin University of Science and Technology, Mr. E.T. Mohamed Basheer, Kerala State Education Minister and Shri B. Rachaiyah, Governor of Kerala & Chancellor, who conferred the degree.



G.B. PANT UNIVERSITY OF AGRICULTURE & TECHNOLOGY

PANTNAGAR-263145

ADMISSION NOTICE 1993-94

A competitive Entrance Examination for admission to the first year of the following programmes will be held on Sunday, the 16th May, 1993 from 10.00 a.m. at Agra, Allahabad, Almora, Bareilly, Bhopal, Dehradun, Farrukhabad, Ghaziabad, Gorakhpur, Jaunpur, Jhansi, Kanpur, Lucknow, Mathura, Meerut, Moradabad, Muzaffarnagar, Pantnagar, Rae Bareilly, Ranichauri, Shahajahanpur, Sultanpur and Varanasi.

1. **Undergraduate Programmes :-** a) **At Pantnagar Campus :** B.F.Sc., B.Sc. Ag. & A.H., B.Sc. (Home Science) and B.V.Sc. & A.H.

b) **At Rani Chauri Campus :** B.Sc. (Forestry)

Eligibility :- Intermediate Science/Agriculture or equivalent.

Maximum Age :- 22 years as on 30.6.1993 for all Categories but 25 years for Scheduled Castes and Scheduled Tribes Categories.

2. **Master's Programmes :-** a) **At Pantnagar Campus :** Agril. Chemicals, Agril. Communication & Extension, Agril. Economics, Agronomy, Animal Breeding, Animal Nutrition, Biochemistry, Child Development, Clothing & Textile, Dairy Husbandry, Design & Production Engg., Electrical Energy Systems, Entomology, Environmental Science, Farm Machinery & Power Engg., Foods & Nutrition, Food Technology, Horticulture, Irrigation & Drainage Engg., Mathematics, Microbiology, Physics, Plant Breeding, Plant Pathology, Plant Physiology, Poultry Husbandry, Process & Food Engg., Rural Banking & Agril. Eco., Soil Science, Soil & Water Conservation Engg., Thermal Sciences, Vety. Anatomy, Vety. Bacteriology, Vety. Gynaecology & Obstetrics, Vety. Hyg. & Pub. Health, Vety. Medicine, Vety. Parasitology, Vety. Pathology, Vety. Pharmacology, Vety. Physiology, Vety. Surgery.

b) **At Rani Chauri Campus :** Horticulture, Seed Science & Technology and Vegetable Science.

Eligibility :- 55% marks or equivalent O.G.P.A. in the relevant degree examination.

3. **Ph.D. Programmes :-** Agril. Communication & Extension, Agril. Economics, Agronomy, Animal Breeding, Animal Nutrition, Animal Physiology, Biochemistry, Electrical Engg., Entomology, Farm Machinery & Power Engg., Food Sc. & Technology, Horticulture, Irrigation & Drainage Engg., Mechanical Engg., Microbiology, Microbiology & Public Health, Physics, Plant Breeding, Plant Pathology, Plant Physiology, Process & Food Engg., Soil Science, Soil & Water Cons. Engg., Vety. Anatomy, Vety. Medicine, Vety. Parasitology, Vety. Pathology, Vety. Pharmacology, Vety. Surgery & Radiology.

Eligibility : Master's Degree in the relevant areas in First Division or 4.000 O.G.P.A. out of 5.000.

Detailed prospectus and application form can be obtained by sending an account payee bank draft for Rs. 25.00 in favour of "PRE-ENTRANCE EXAMINATION CELL REVOLVING FUND ACCOUNT, G.B. PANT UNIVERSITY OF AGRICULTURE & TECHNOLOGY, PANTNAGAR" or State Bank of India, Pantnagar (Branch Code-1133) or UCO Bank, Pantnagar (Branch Code-678) with a self addressed envelope of 10"x12" size bearing postage stamps of Rs. 6.00. Cheques/Money Orders/Postal Orders will not be accepted.

Closing Dates :- 31.3.1993 with prescribed fee of Rs. 125.00 and 12.4.1993 with fee of Rs. 200.00 for Pantnagar Centre only.

Application forms for sale will be available from 8.2.1993.

Note :- Candidates must not have IIIrd Division or marks less than 45% at any stage in their academic career to be eligible for admission in the University.

REGISTRAR & COORDINATOR (ADMISSION)

UNIVERSITY NEWS

VOL. XXXI

MARCH 8

No. 10

1993

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IN THIS ISSUE

Excellence Vs Accountability in Indian Science	1
Private Provision in Higher Education – Myth & Reality	5
Some Thoughts on Planning in Higher Education in India	8
Higher Education in U.P. in the Eight Plan	11
Convocation	
Cochin University of Science & Technology, Kochi	15
Campus News	
Anna Varsity Convocation	18
Promoting Urdu Publishing	19
Osmania University Convocation	19
Agriculture	
Workshop on Forestry Course Curriculum	20
Pulse Day at MPKV	21
New Crop Varieties Developed at HAU	21
News from UGC	
Countrywide Classroom Programme	22
News from Abroad	
Privatise Oxford	23
UN University HQ Inaugurated	23
AIU NEWS	
Champion Colleges Tournament	24
South Zone Youth Festival	24
Book Review	27
Current Documentation in Education	29
Theses of the Month	30
Classified Advertisements	34

Opinions expressed in the articles
are those of the contributors and do
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the Association.

Editor :
SUTINDER SINGH

Excellence Vs Accountability in Indian Science

Pawan Sikka*

India has a long and distinguished tradition in science : the mathematical discoveries, urban planning on geometric basis, medical findings leading to the development of Ayurveda, metallurgical skills, astronomical observations, etc. The real Indian awakening in modern science took place through the personal efforts of a large number of outstanding Indian scientists who worked over the three quarters of the century prior to independence of the country. For example Sir C.V. Raman was awarded Nobel Prize in Physics in 1931, for the famous Raman Effect; while Bose – Einstein equation and "Bosons" were discovered by S.N. Bose; Meghnad Saha was honoured for Saha theory of Ionization; J.C. Bose received international acclaim for his pioneering work on millimeter waves as well as plant sciences, A.S. Paintal won acclaim for excellent work on J. receptor in physiology, Bhabha is known for research on fundamental particles, etc. Thus, science was then a personalised activity in India.¹

From Private Science to Government Science

The Colonial British period developments in S&T took place to cater to the requirements of the then Government. Survey organisations were established to collect data on the flora and fauna in India. The outbreak of the second World War (in 1939) brought about a radical change in the pattern of scientific and technological research in India. From the concept of private science, it became in reality the government science. Pandit Nehru, in 1938, sent a message to the Silver Jubilee Session of the Indian Science Congress at Calcutta, that :

"It is science alone that can solve the problems of hunger and poverty, of insanitation and illiteracy, of superstition and dreading customs and traditions, of vast resources running waste, of a rich country inhabited by starving people. Even more than the present, the future belongs to science and those who make friends with science."

The government headed by Pandit Nehru, India's first Prime Minister, thus expressed the implicit faith in the use of science to obtain material well-being for the Indian people. Political and government support led to the institutionalisation of science in India, that is, a Council of Scientific and Industrial Research (CSIR) was set up in 1942, Tata Institute of Fundamental Research was set up in 1945. Homi Bhabha's vision led to the setting up of Bhabha Atomic Energy Research Centre, Bhatnagar's effort created a chain of national laboratories, and Vikram Sarabhai's vision saw the emergence of Space Research Centres in India. Thereafter leadership to these and several other R&D institutions was provided by the students of the above said eminent scientists i.e. Bhagvantam, Krishnan, Ramanathan, etc. But the efforts of many others who came to head the R&D laboratory system later transformed it to an extension of the university system. The concept that S&T was needed to underpin and to accelerate the national development had to await the change in the ethos on the scientific scene.²⁻⁴

*Director, Deptt. of Science and Technology, Govt. of India, New Delhi-110 016

Science in India

Science in India drifted from the personal academic pursuit of truth/excellence to the institutionalisation/compartmentalisation for its immediate social relevance. Though the basic orientation of S&T policy has been and still is, to treat science and technology as an integral part of socio-economic development, there have been several changes in the organisation and planning strategies over the years. These changes have generally directed S&T from an infrastructure and capability-building phase (1947 – 1960's) to assessment and reorientation (1970 – 1980s) on to performance and accountability.⁵ Further with a view to steer the S&T development in the country, the Government of India

- encouraged the setting up of educational or technical institutions in the country;
- promoted the establishment of R&D institutions,
- provided the financial support for carrying out the S&T efforts, and
- enacted policy instruments, Acts etc., to channelise it in the right direction.

The Government of India became a major patron of science in the country. India's expenditure on R&D has increased from 0.2 percent of GNP in 1958-59 to 0.89 percent of the GNP in 1991-92. Various educational institutions were established alongwith technical, medical and agricultural universities to produce qualified manpower in the country. Today, India has third largest S&T manpower in the world which is estimated to be about 38 lakhs in 1991-92. It has made rapid strides and have achieved self-sufficiency/self-reliance in many areas, such as agriculture, atomic energy, space, ocean exploration, medicine/health care, industry, etc. The S&T expenditure in successive Plan periods has increased from Rs. 20 crores in 1951-56 to Rs. 7537 crore in 1985-90. The basic contributor to the R&D expenditure is the government (85-90%) of which most of the funds, say, about 80% come from the central government.⁶ The Government of India has expressed her reasons/desire of funding S&T in the country, in her Scientific Policy Resolution of 1958, viz. –

"To foster, promote and sustain, by all appropriate means, the cultivation of science and scientific research in all its pure, applied and educational aspects."⁷

The development of Indian science and technology has been, on the one hand, in relation to the great advances that have taken place in S&T in the world as a whole, and on the other hand, to the compulsions of ensuring that it is relevant and serves the overall purpose of development of the country. These efforts have led to the capability-building in many areas of S&T towards achieving self-reliance in the country.

The leaders of the Indian Science in post-Independence era like Homi Bhabha, Vikram Sarabhai, MGK Menon, MS Swaminathan, AS Paintal, CNR Rao, etc. who after excelling in science and making their names in their chosen area of research, have devoted a lot of their time and energy for the policy, planning and management of S&T towards the application of S&T in independent India. But it was done voluntarily at the cost of their scientific advancements, because it was very essential for the development of India. However, many of our young brilliant scientists have left India for higher studies/pursuit of science abroad and settle themselves there unlike in earlier times when Indian scientists did go abroad but used to come back to serve the motherland i.e. to pursue science, create a school of fellow scientists, develop application oriented science leading to the economic upliftment of India. Thus drifting of the scientists from the climax of research career to policy planning issues; and the brain drain among the cream of budding scientists seems to be the two chief reasons why India did not get any Nobel Prize in the Independent India, if it is any yardstick for excellence in science.

Accountability

Science without originality has no meaning. Science flourishes wherever originality is encouraged. Basic science requires least amount of management and the largest amount of freedom to think and discuss. Applied science calls for accountability in which economic considerations play an important part. There are various types of accountabilities, that have come into existence in the recent past. These are social accountability, environmental accountability, quality and excellence of the scientific efforts, and above all, the financial accountability.

Accountability of science should be measured in terms of its objectives i.e. what exactly we want to do and how much we get or why there occurs a gap in the expectations? Accountability in the early years when the

scientific effort was on smaller scale, depended entirely on the personality of the scientists e.g. Raman, Bose, Saha, Krishnan and in the later transition stage Homi Bhabha, Bhatnagar, and others. Raman could make original contributions to science with a self-designed experiment costing a few thousand rupees. Their pursuit of science and devotion to perform basic research led them to achieve excellence in science, and make a mark in the world-science.⁸

The scientific scene got changed and science was made to serve the cause and upliftment of society. There arose the concept of management of science – which is a complex subject itself as each set of scientific problems requires a special kind of management. A number of issues arise with regard to the management of S&T such as administrative aspects, training, and imparting public awareness of the scientific results. We have an experience of several models in the management of science and technology in India. These are

- * Agencies and structures like CSIR, ICAR and ICMR which are multi-institutional and have mandate to develop S&T in very many broad areas;
- * Commission structures like Atomic Energy Commission and Space Commission – dealing in focused, time based and large programmes with functional autonomy and have generally performed well;
- * At the institutional level there are national laboratories, institutes and centres; and
- * Other broad type of structures which bring together various agencies and institutions for coordination purposes i.e. for inter-institutional and/or interdiscipline aspects.

There are many institutional programmes, inter-institutional ones too and mission-mode projects with large investments involving several organisations at different places in the country. It is a challenge as how to bring them together into an effective management structure to ensure proper return from such investments. There is, maybe, a need as felt in some circles, for creating now a corporate type of structure to manage science in India.

Management by Objectives

We have moved from individual science to team science and then to institutional science. The principle

of management of scientific infrastructure in terms of public accountability would remain the same as the management of infrastructure in any other discipline. A reasonable approach to scientific management would emerge if management by objectives (MOB) is done through a matrix system.

The principle in the matrix mode of management suggested here is that the organisational system of the institution should be so seen that the non-intellectual part is managed by the routine exercise of the management principles and the scientific aspects are managed by the scientists so that the intellectual advancement is maintained. The infrastructure management must coordinate with science and scientific operations. To maximise the total S&T system, we should optimise the constituent sub-systems. Both these streams should be managed by corporate directions in order to maintain a balance between the two streams. In such circumstances, the accountability in terms of returns and results to the organisation would be optimised.

But the present demand of the time calls for the development of immediate linkages among the application of science for the development of society. The interaction between science and society requires the development of applied science and for which no Nobel Prize has been instituted (otherwise Japan would have bagged most of them in the past four decades) as a measure of excellence as well as accountability in applied science.

It is a challenge to the scientific community to come up with their own indicators/parameters by which they be judged. There should be some correlation between the inputs and output in science in India. Unless the scientists are bound morally to these issues the question of accountability will remain unanswered. The question of accountability in science will remain a concept – the building up of which would be difficult to conceive and demonstrate. It should be viewed in totality by the scientists, administrators, financial experts as an integral part of the S&T system in India. Though it appears that both excellence and accountability oppose each other to some extent, it is necessary to find ways and means for their peaceful co-existence in a developing country like India.⁹

Critical Analysis

It is observed that the attainment of national as well as international honours, including the award of prestigious fellowships, Nobel Prize or a breakthrough in science can be considered as a yardstick for the measure of excellence in science. Here, in this context it is seen that any of the Indian scientists of the present generation achieved professional eminence by dedicatedly pursuing research work in their chosen area of science, as a personalized activity. At a critical time, when they exhibited "Spark" after devoting a good span of their life, they came to the notice of the government who felt like utilizing their expertise for the development of S&T in the country, and sought their advice by associating them in various professional committees. This made it difficult for them to manage both the activities at the same time i.e. vigorously pursuing the scientific research and conducting the tricky affairs of science policy – planning and management. It took them unawares and drifted them from real scientific career. This drift actually happened at a time when they were in the thick of the matters to make a breakthrough in science. But it occurred so swiftly that it was too late to realise the transition. After some time they resumed the scientific research and found that during the intervening period, the progress in S&T took place with leaps and bounds and it became difficult to catch up.

It is suggested that the eminent scientists should participate in the policy-planning exercise to the barest possible and leave the job to trained administrators so that their own scientific career is not disrupted. It should be viewed from the long-term benefits of S&T in the country. This non-linear transformation of an eminent scientist, from the pure research career to science administration and back, can be termed as Sikka's Swift Drift in excellence Vs accountability in scientific career.

Secondly, migration of qualified manpower or the brain-drain among the brilliant young scientists, who after attaining scientific proficiency/capabilities at home go abroad and do exceedingly well there and settle themselves there, deprive India of the promising opportunities of inculcating excellence in science in the country. If they decide to come back, it would dramatically change the national scientific scene. Efforts are

required to reverse the brain drain and utilise the services of NRI scientists in enhancing the S&T capabilities of modern India.⁹

Finally, the health of science in India, was even a matter of great concern to the Science Advisory Council to the Prime Minister, which under the chairmanship of Prof. CNR Rao, has suggested several measures for the overall management and research & development of science in India.¹⁰ A great deal of effort is now called for to bring in better levels of science and technology into the lives of people so that they can derive greater economic benefits. This will be the greatest challenge not only for the application of science but for the organisation of the national scientific efforts in the country. Serious efforts are required for the better management of science and technology without sacrificing the basic concept of excellence against accountability in India.

[The views expressed in this paper are the personal views of the author.]

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Private Provision in Higher Education

Myth and Reality

C.R. Mitra*

Introduction

Recently a spate of media comments has erupted on certain aspects of education. Earlier there was a small ripple in connection with the so called capitation colleges for engineering and medicine. After the matter went to the Supreme Court the item has receded from the headlines. Currently the main target appears to be privately provided training institutions that prepare the students for a career in computer application. The comments appear to be highly self-righteous and moralistic through innuendo and selective reports. This industry has been accused of violating all kinds of provisions of the UGC Act, MRTP Act and the DOEADC. Choosing the theory of 'rotten apple' the handling of the reports has at least not made a distinction between good apples and bad apples.

In the context of the all round financial crunch which prompted the Government of India to declare that it would not be able to continuously subsidize higher education even at the present level, it was hoped that unmet demands of education and training could be increasingly provided through private resources. Thus, it would have been more useful if a total perspective was invoked in presenting these news items. What is required is to clearly search for alternate money and bring an infusion of market forces and a sense of greater financial accountability into the higher education system as a whole. In fact the word private provision is not clearly defined and a meaning is imposed on the basis of the ultimate object of a report. This article would attempt to offer an overview, identify the various kinds of private provisions and suggest a more 'meaningful' approach so that private and public provisions may co-exist and compete amongst themselves just what a

liberalised economic policy has sought to achieve in the industrial sector.

A Sketch of Private Role

The higher education system in which this article includes all postsecondary education and training would be highlighted both as a system as well as the operational manifestations to delineate the private role.

a) SYSTEM CLASSIFICATION

(1) *Universities or Colleges*

These are largely a creation of the government or approved by the government. The genesis is invariably an Act of legislature. They award degrees in the nomenclature determined by the UGC Act. Private participation in this sector has been strictly according to the predetermined curricula, method of examination, physical and infrastructural facilities. Thus, the role of the private sector is limited to supplying additional money to meet increasing demand.

(2) *Recognised Institutions*

These are accorded governmental blessings through administrative action rather than an authority of an Act of legislature. They award diplomas, which by the virtue of governmental recognition, are accepted as equivalent to certain degrees. There are also private sponsors of such institutions, once again within governmental boundary conditions.

(3) *Educational Institutions Outside the above two*

These have taken a recognisable shape over the last two decades. They are neither recognised by the government nor are they an outcome of an Act of legislature. They exist because there is a need or because there is a market which uses a trained student. They also award diplomas or certificates on the proficiency attained by the student. They include training and coaching institutions and inhouse training in large in-

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dustries (public or private). The knowledge or skills areas covered by them almost include every professional area which improves the job opportunity of a student. To mention a few, computer, hotel management, general management, word processing, secretarial training, advertising, fashion design, journalism, sales, etc. In addition to the above there are professional societies which arrange training for professionals in a field of specialisation and pronounce judgement by award of titles called Graduate, Associate and Fellow.

The size of this informal system outside the pale of the formal is almost equal to the professional component of the formal system. It is often not realised that most of these training institutions willy-nilly give the training after the first Bachelor's degree (B.A., B.Com. and B.Sc.) or impart the training concurrently with the pursuit of Bachelor's degree. They charge economic fees. They do not receive any subsidy from the government. On the other hand they pay tax to the government. It is an oblique commentary on our education system that lakhs of persons try to add value to their Bachelor's degree in order to become employable. The media comment has not touched upon this phenomenon nor has tried to bother about the issue of relevance between Bachelor's degrees and these training programmes.

b) NATURE OF PRIVATE ROLE

- (1) Having structurally delineated the private participation, it will be useful to examine the same matter through certain standard manifestations of the operation of an educational institution.

By Money

Government is the largest provider and it sets the tone of all aspects of education simply by the virtue of the fact that it provides the money. If part of the money comes from private sources it is the government purpose which has still to be fulfilled. Privatisation in this situation simply means that the unmet demand would be fulfilled through reduced inflow of money from the government. However, no one has bothered to estimate the justification for manpower projections once again made by the government.

By Rule

Government lays down all rules governing such institutions. The ostensible reason is the need

to maintain standards of education. If one were to examine the mechanism by which these standards were made one sadly comes to the conclusion that these standards are nothing other than mindless repetition of curricula, mode of delivery and organisational structure prevalent for almost 100 years. No concessions are made for needs of innovation, international knowledge explosion, undisputed failures of a system maintained through priming of money and benevolence.

By Examination

Ultimately these standards are pronounced through external examination. The examples of internal examination are very few to deter from the central observation. The private role so far in the formal system has been on the basis of acceptance of verdict by an examination system maintained by the government. Recently some efforts have been made to offer centralised government regulated examination to the informal system.

By Fees

This is an item which generates much discussion and is often used to denounce private participation. It is one thing to accept that the fees should not be exorbitant but it is a totally different problem if we want to relate cost with fees. Fees are nothing but a price that is charged for a service or a product. If costs of all items have escalated it is strange that one still argues in favour of maintaining the price of educational services at the same level. Further, there has been no systematic study on the cost of education to even obtain an overall perspective.

By Threat of Punitive Action

Having allowed private money to flow into a predetermined system the government in its wisdom established various agencies to continuously monitor the private role in terms of fees to be charged and impugned malpractices.

Conclusions

- (1) The private role in the formal system has been within the framework of a fixed prototype. It has not received any dynamism of business efficiency or market forces, even though some of the providers have come from major industries.
- (2) The informal system has remained largely invisible because the providers have not taken an academic

position and the formal system has largely ignored it, but the customers, i.e., the students subscribed to it in large numbers. They invariably find that it is necessary to add value to their formal degrees through this informal system.

- (3) Irrespective of our personal views postsecondary education and training needs private resources in order for the nation to meet its manpower requirements. There simply exists no other alternative to this hard fact.
- (4) The issue cannot only be shortage of funds. The simultaneous question would be whether we are using the funds frugally and efficiently. It would therefore be necessary to turn to private experience in management and to have respect for the market forces. Posing these basic questions we will be able to address the problem of productivity in education and cost-effectiveness.
- (5) The formal system because of its sluggishness has not been able to always immediately and effectively update the curriculum and make it relevant to the world of employment. Once again tips on relevant curriculum will emanate from the practices of private educational entrepreneurs.
- (6) If the country's requirement of supply of manpower as well as the unmet demands of young people have to be faced, it would be dysfunctional if we cannot take advantage of the informal system which exists and serves the purpose. Thus instead of falling prey to the theory of 'rotten apple' we should at least ensure that the configuration of the good apple is also written about and brought to the notice of the public. In this matter it is to be hoped that governmental agencies like the UGC, MRTPC, DOEADC, etc. would develop a wider perspective and role. To act purely as a monitoring agency in search for the bad apple is historically invalid now. With their rich experience they can easily become enabler and facilitator to help the informal system become visible and join the mainstream of higher education. Too often the so called public impression is invoked to depart from the letter and spirit of the Act. If public impression is antagonistic to the Act, there are only two alternatives – amend the Act or educate the public.
- (7) The worldwide movement has already entered a domain where the relevance, financial viability and good management techniques have been increasingly demanded from all formal higher education systems. In India, we will not be able to sustain a

flabby and largely irrelevant system through government subsidy and maintain a detached aloofness towards the training industry. It would be vitally important for all of us to develop new attitudes and create an optimum network of providers by congruence of the formal and the informal systems.

A Call for Purposive Action

We have so far been guided by the bureaucrat's vision of the education system. This vision must be enriched by the practical experience of educational entrepreneurs. The initiative has to come both from private providers as well as the various governmental agencies. Once again there should be an exit policy in education by the government and a greater liberalisation of attitudes towards all educational systems in the country. If initiation has taken place in the field of industrial production, the follow up will invariably overwhelm the higher education system. It would be more prudent if the system takes the initiative and leadership rather than wait for the inevitable to happen.

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Some Thoughts on Planning in Higher Education in India

P.H. Sethumadhava Rao*

There has been an unprecedented, phenomenal expansion of higher education in India during the last 45 years. As a result of this unplanned expansion, the quality of higher education has deteriorated over the years. It is paradoxical to see that in India, on the one hand, the opportunities for young people for getting admission to colleges and universities have increased considerably and on the other hand, the universities have not been able to maintain the academic excellence for a variety of reasons. There is a need to evolve a strategy whereby quality, quantity and equality are maintained which is a difficult task indeed.

The country inherited a system of higher education which was not only small and microscopic, but also qualitatively dysfunctional in relation to the task of development of an Independent India. In 1948, eminent educationist Dr. S. Radhakrishnan suggested the need to establish an apex body like the UGC for coordination and maintenance of standards in higher education. This was done in the year 1956 by an Act of Parliament.

As a result of quantitative growth in higher education, we have today over 200 universities (including deemed to be universities) and more than 7000 colleges in the country. In spite of this tremendous expansion in the field of higher education, India is regarded as the third largest country having maximum number of illiterates. The population explosion in the country makes it impossible to provide access to higher education for all the youths. Less than 10% of the population are enrolled in higher education. In other words, 90% of the population is still deprived of higher education in the country and some of them may be really deserving.

The quantitative growth has resulted in a major mismatch between output of educational institutions and the demands of employment sector. The pressure to expansion, mismatch of supply and demand and limited resources pose a serious problem to the educational

planners in India. As a result of tremendous growth of higher education, the following problems have emerged :

1. Unplanned proliferation and inadequate infrastructure in terms of teachers, buildings, libraries, laboratories etc.
2. Mismatch between education and employment and lack of planning in setting up of new universities/colleges has led to frustration – the main cause of unrest in the college and university campuses.
3. A dismal dilution of standards.
4. Frequent disruption of academic activities and increase in number of strikes.
5. Most of the universities have not been able to follow the minimum academic calendar of 180 working days in a year due to various types of disruptions (notable exceptions are institutions like Sri Sathya Sai Institute of Higher Learning (SSIHL), Prasantinilayam, A.P.).
6. Some of the best talented students from IITs, IISc Bangalore and AIIMS, New Delhi go abroad resulting in brain-drain.
7. There has been a steady erosion in the quality of higher education institutions which were earlier considered as the top ones. The reason being tuition fees has remained static over the last 40 years and the expenditure has increased manifold. This results in increase of sub-standard institutions of higher learning.
8. In many states the entire salary component of the teachers and maintenance cost of buildings/laboratories is met by the state governments which has resulted in corruption. In other words, at some places people paying donations are appointed or the persons who pay more donation to the institution are selected and best teachers are not selected. This has resulted in a vicious circle of not maintaining proper standards. This is true in respect of admission of students also.

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Considering all the above aspects, we can say that there is a need for proper planning in the higher education sector.

If quantitative expansion is seen as a means of promoting equal opportunity or making access to higher education for the low-income groups, one can say that it has failed miserably. In fact the concept of higher education to a majority of standards instead of providing equal opportunities to all, has aggravated the inequality over the years. Over two thirds of India's university/college beneficiaries are from the top 30% of society. Only 5% of the student population is from the poor families. Whether it is rich or poor, the public subsidy has been the same. Over the years, the top students seeking admission in the colleges/universities/IITs are from the high income group. They have access to special coaching right from the school level. The so called public schools in the country have created a partition among the common learners. Parents are ready to pay heavy donations/fees and get their children admitted to the public schools. It is a matter of great concern that the students studying in the government schools are the ones completely neglected both by the government and the teachers in the school. The inequality gap widens when they seek admission in the colleges. The unaided private institutions have become money spinning sources for the management people. In many states, privatisation has resulted in lowering of academic standards in professional education like Engineering and Medicine.

Thanks to the verdict of the Supreme Court of India, henceforth it will not be possible for the private sector to start sub-standard medical colleges in the country. If sub-standard doctors and engineers are produced by the private institutions because of less efficient teaching staff, it will be great danger to the society or humanity as a whole. At any cost, quality has to be maintained in engineering and medical colleges. We hear a number of cases of negligence by doctors and engineers at many places; this is mainly due to the sub-standard quality of education that they have received by paying high capitation fees. Though education is on the concurrent list, this fact has not been properly looked into.

Enormous increase in public expenditure on education has led to drastic resource constraint. Strategies have to be evolved to raise non-budgetary resources for education. Continuous government support has made the people more passive, which must change. Univer-

sities should be encouraged to generate funds through consultancy, commercialisation of research output, interaction with industries, etc. All holidays in the campuses should become 'holy days' for generation of funds.

If we want to reduce the burden of the government on higher education, some immediate steps have to be taken to maintain the quality of standards. It is pertinent to observe in this connection that some of the top educational institutions in western countries have been established, financed and managed by private enterprise or a consortium of business donors and the community has been greatly benefited from it; the laws in these countries allow substantial tax benefits for private contributors towards promotion of education. Another fact is that slowly the government expenditure on higher education has been reduced considerably, in western countries like UK, USA, etc. In India, the rate of subsidy is very high and as a result most of the government income is spent on the maintenance of the colleges/universities resulting thereby a great negligence of primary and non-formal education. Education/literacy are definite parameters for the growth of a country which may solve the problems of poverty and unemployment to some extent. Unfortunately, we do not plan with regard to the number of graduates required in different sectors. As a result we face a situation of having a number of unemployed and unemployable graduates. Proper planning in higher education calls for the following :

1. Existing institutions be made self sufficient by reducing drastically the government subsidy.
2. In order to see that the quality of standards are maintained, the universities/colleges should be accredited once in three-five years. Only graduates passing out of the accredited institutions should be employed by the various private/government agencies.
3. Before any new college/university is set up, a proper survey has to be made to find out the need and also to identify the private donors who can run the college/university with the minimum government support.
4. While government supervision is absolutely necessary at all stages, a standing committee consisting of representatives from the UGC/ State Government/public personalities should be constituted to monitor the progress of the college/university and keep the atmosphere free

tion of the resources which will help qualitative upgradation in higher education.

5. The Industry has to play a key role in promoting and financing research and in the maintenance of technical institutions to a great extent.
6. While students from all sections must be admitted on the basis of an admission test, it would be necessary to provide more scholarships/freeships/loan scholarship for the deserving. Such a step will enable the institutions in increasing the tuition fees which has remained static for over 45 years.

A bold and new strategy has to be worked out for financing higher education on the lines suggested above.

It must be remembered that we have institutions like SSIHL, Prasantinilayam where no fees are charged and excellent students come up every year. Even the hospital which is in the vicinity has excellent facilities which can be compared to any famous one in the world.

Presently we find that in view of large number of students passing XII class with high percentage of marks, admission is being restricted to a handful of students. The students with less percentage of marks are denied admissions in the colleges. While the talents among the students with lower percentage cannot be ruled out in view of our examination system which is based on memory, provision should be there for admitting students from all categories.

Another way is to have more vocational colleges so that they shall be able to join job-oriented courses. Distance Education has to be given high priority. The admissions should be based on entrance test as is in the case of IITs, and at some universities so that all motivated students have an access to higher education. Some of the dropouts owing to personal reasons should have access to higher education through distance mode of education.

As Dr. Radhakrishnan has rightly pointed out, "Today, when our country is passing through a crisis, the only demand that one can make on all educated men is to use their education, their skill and their wisdom for the purpose of integrating society and not disintegrating it." This is more relevant today.

The education system needs to be restructured and updated and it is necessary to weed out the outmoded branches of study, introduce innovative ideas to combine theoretical knowledge with practical training. The

curriculum content of collegiate education has remained static for a long time. There is an urgent need to revise and update the curriculum, particularly at the undergraduate level to make it more dynamic and relevant to the socio-economic needs of the country. The National Policy on Education has recognised the organic link between higher education and social, economic, cultural and moral and spiritual issues facing humanity.

Educational management should be supervised by people who have a broader vision. This includes bodies like Academic Council, Board of Studies and Executive Council. All Boards of Studies in the universities should have top academics in that discipline who can set example by framing proper syllabus, suggesting proper examiners and taking decisions on academic matters in the interest of the discipline.

The planning also requires a formulation of a comprehensive policy on higher education based on a countrywide mapping of needs of human resource development plans in the country pertaining to all sectors of economy, social life, culture and global relationships.

Development of alternative mode of higher education, particularly the distance mode at all levels is necessary to cater to the needs of an increasing number of learners.

Autonomy is an indispensable ingredient of the process of planning, instruction, evaluation and management of higher education. Accountability and autonomy should go hand in hand.

We are now amidst a mire of adhocism trying to meet the challenges of education which is still based on a colonial model. The system may break at any time giving rise to a volcano. It would be wiser if we plan in such a way that we do not reach the stage of volcano at all.

The higher education system should start thinking in terms of generating its own resources. Total dependence on state funding should be reduced; the only way we can impart quality education is to recruit best teachers and introduce innovative measures in teaching so that we impart socially relevant and need based education. The planning has to be in this direction only.

All is not well with our universities. There are rich traditions, abundant manpower, technical knowhow and it is for us to see that our universities function with a high degree of responsibility and maintain academic standards.

Higher Education in U.P. in the Eighth Plan

L.N. Mittal*

The Constitution of India embodies the principles on which the national system of education is perceived. This implies that upto a given level, all students, irrespective of caste, creed, location or sex have access to education of a comparable quality. To promote equality, it will be necessary to provide for equal opportunity to all not only in access, but also in the conditions for success. To eradicate prejudices and complexes transmitted through the social environment and accident of birth, awareness to 'equality of all' has to be created through the national system of education. In this context, higher education has a pivotal role to play to reflect on the critical social, economic, cultural, moral and religious issues facing humanity. It contributes to national development through dissemination of specialized knowledge and skills. In view of the unprecedented explosion of knowledge, higher education has to be dynamic as never before. In the Indian context three sets of activities – teaching, research and extension (community action) are assigned to higher education.

U.P. is the most populous state in the country. Since population is the ultimate beneficiary of development process, it would be appropriate to first review the availability of natural resources in the state in relation to its population.

The share of the state in the country's geographical area is only 9.0 percent as against its share of 16.5% in population. The state is characterised by the abundance of small villages according to population size. This phenomenon itself adds to the magnitude of efforts required for development.

Table 1 : Urban Population & its Occupational Distribution

	1971	1981	1991
Urban population (in thousands)	12389	19899	27653
<i>Occupational pattern of workforce</i>	1971	1981	1991
Agriculture	78.0%	75.0%	73.0%
Industry	7.9%	10.0%	5.0%
Others	14.1%	15.0%	22.0%

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Muzaffarnagar-251 001 (Uttar Pradesh).

Table 2 : Average Annual Growth in Total Income and in Per Capita Income of U.P.

	Annual Growth in total income - %		Annual Growth in per capita income - %	
	U.P.	All India	U.P.	All India
1951-52 to 1955-56	2.0	3.6	0.5	1.7
1956-57 to 1960-61	1.9	4.0	0.3	1.9
1961-62 to 1965-66	1.6	2.2	0.3	0.0
1966-67 to 1968-69	0.3	4.0	1.5	1.8
1969-70 to 1973-74	2.3	3.3	0.4	1.1
1974-75 to 1978-79	5.7	5.3	3.3	2.9
1981-82 to 1984-85	4.00	4.8	1.8	2.6
1985-86 to 1989-90	4.8	5.6	2.7	3.5
1981-82 to 1989-90	4.4	5.2	2.3	3.1

During the State's Seventh Plan period, the number of junior basic schools was 63695 in 1973-74. It increased by 14.5 percent to 72959 in 1984-85 and by 1.8% to 74275 in 1989-90. The number of senior basic schools also recorded an increase of 45.0% during 1974-85 when it moved up from 10076 (1973-74) to 14614 (1984-85) but it declined marginally to 14549 in 1989-90. Growth of student enrolment in higher education was 3.7% and one university was opened and another institution was given the status of deemed university. 15 new degree colleges were given recognition. Literacy percentage did not make much headway in the Seventh Plan period.

At the time of Independence, U.P. had 5 universities and 16 degree colleges. At the beginning of the Eighth Plan, it has 2 central universities, 13 general education state universities, 3 state agricultural universities, one state engineering university, one Sanskrit university, 4 institutions deemed to be universities, one institution established under state legislature act, one I.I.T., and one institute of management. There is no open university in the state although IGNOU has several study centres in U.P. There is also no women's university in the state.

UGC Schemes

The details of departments supported by the UGC under its specialised schemes are as follows :

COSIST

Physics	BHU, Roorkee, AMU, Allahabad
Chemistry	Gorakhpur, BHU
Life Sciences & Bio-Sciences	BHU, Lucknow
Earth Sciences	Kumaun, Roorkee, BHU
Mathematics	Allahabad
Engineering	Roorkee, BHU

Centres of Advanced Study (CAS) in Humanities and Social Sciences

History	AMU
Psychology	Allahabad

Departments of Special Assistance (DSA) in Humanities and Social Sciences

Commerce	AMU, Allahabad, BHU
Ancient History	Allahabad, BHU
Philosophy	BHU, Allahabad
Sociology	BHU
Psychology	Gorakhpur
Arabic	AMU
Hindi	Allahabad
Mass Communication and Journalism	BHU
Music	BHU
Anthropology	Lucknow
History	HN Bahuguna
Social Work	Lucknow

CAS in Sciences, Engineering and Technology

Botany	BHU
Met Engineering	BHU
Zoology	BHU
Electronics	BHU
Physics	BHU
Mining Engineering	BHU
Mech & Industrial Engineering	Roorkee
Molecular Biology	BHU

DSA in Sciences, Engineering & Technology

Biochemistry	Lucknow
Chemistry	Allahabad, BHU
Geography	AMU, BHU
Botany	Lucknow, Allahabad
Earth Sciences	Roorkee
Physics	Roorkee, AMU, Allahabad, Kumaun
Civil Engineering	Roorkee
Earthquake Engineering	Roorkee
Ceramic Engineering	BHU
Geology	Lucknow, Kumaun
Electrical Engineering	BHU
Mathematics	Allahabad, Roorkee

Departmental Research Support

Zoology	AMU
Chemistry	Gorakhpur
Electrical	Roorkee
Metallurgical	Roorkee
Geology	BHU

U.G.C. Curriculum Development Centres

Earth Sciences	Roorkee
Commerce	Allahabad
Plastic Arts	BHU
Hindi	BHU
Urdu	AMU

Hi-Tech and R&D Areas

Biotechnology	BHU
Ocean Science	Nil
Atmospheric Sciences	Nil
Mass Communication Media Centre	Roorkee
Race to Save the Planet	Nil
Film Study	Nil
Third World Studies	Nil
Future Studies	Nil
Centre for Regional Studies	Nil

Centre for Women's Studies	Nil
Cells for Women's Studies	Kanpur, Muzaffarnagar, Meerut, Akbarpur
Science Education Centre	Nil
USIC	Nil

It would be noted from the above that the major UGC grants have been netted by the two central universities and a very few state universities.

Higher Education in the Eighth Plan

The U.P.'s Eighth Plan envisages the following objectives with regard to higher education :

- existing degree colleges be strengthened,
- new colleges be established in unserved backward areas,
- implementation of three year degree courses,
- greater emphasis on provision for women's education, and
- under youth welfare programmes, greater emphasis be given to NCC than to NSS.

The *strategy* to be adopted for the Eighth Plan to implement the above objectives has been enumerated as follows :

- Except for a few, most of the Govt degree colleges do not have their own buildings and some of them do not have even their own land for construction of buildings although they have been running for quite sometime. Therefore, the first priority would be given to provision of land and building for such institutions;
- Regional balance in higher education would be established by preferential treatment for unserved backward areas;
- Although three year degree courses have been introduced by all the universities in the state during the Seventh Plan period, necessary and adequate infrastructure could not be developed for the purpose. It has been proposed to provide posts and funds for additional classrooms, library, equipment, etc. for such colleges and universities; and
- The state Government has decided not to open any new degree college under Govt. sector in the Eighth Plan and if opening of new colleges becomes unavoidable then such new colleges would be opened in private sector. However, it would require the Govt. to bring unaided degree colleges under grants-in-aid list for the purpose of salary payment.

Plan Outlay for 1992 - 97 and for the yearly plan of 1992-93 (Rs in lakhs)

Major/Minor Head of Development	Eighth Plan (1992 - 97) (Proposed outlay of which)			Annual Plan (1992-93) (Proposed outlay of which)		
	Total	Hill	Capital Content	Total	Hill	Capital Content
Education	190215.0	32375.0	38873.26	24548.38	4569.50	5420.01
Higher Education	22730.45	4174.95	17975.00	3042.09	341.89	2140.00
Administration	751.88	100.00	350.00	225.35	50.00	125.00
Universities	11795.00	445.00	10625.00	1235.00	40.00	1050.00
Govt. Colleges	8195.99	3309.60	7000.00	1135.02	234.55	965.00
Non-Govt. Colleges	1058.23	64.38	0.00	177.97	2.25	0.00
Institute of Higher Learning	565.00	0.00	0.00	233.00	0.00	0.00
Other	364.45	255.97	0.00	35.75	15.09	0.00
Expenditure Break-up Figures						
Development Grant to Universities	1070.00	445.00	-	165.00	40.00	-
Second Campus of Lucknow University	625.00	0.00	-	50.00	0.00	-
Dev. Grant to BRA University	1000.00	0.00	-	1000.0	0.00	-
Implementation of T.D.C.	0.00	0.00	-	0.00	0.00	-
Construction of Library building of Gurukul K. Univ.	0.00	0.00	-	0.00	0.00	-
Opening of New Govt. Degree Colleges	3390.00	1370.36	-	143.87	50.00	-
Strengthening of existing Govt. degree colleges	406.09	214.44	-	61.63	46.63	-
UGC matching share to Govt. Colleges	100.0	50.00	-	15.00	5.00	-
Construction of Buildings of Govt. Colleges	2795.00	625.00	-	748.00	48.00	-
Electrification of Govt. Colleges	25.00	25.00	-	1.00	1.00	-
Teaching and Non-Teaching Residences for Govt. Colleges	250.00	250.00	-	20.00	20.00	-
Construction for Hostel Building for Govt. Colleges	460.00	460.00	-	50.00	50.00	-
Purchase of land for Govt. Colleges	75.00	25.00	-	10.00	5.00	-
Provisions of Petty Works in Govt. Colleges	75.00	25.00	-	12.00	2.00	-
Construction of Library Building of Govt. College, Pithoragarh	4.00	4.00	-	0.50	0.50	-
Provision of Land in Govt. Colleges	0.80	0.80	-	0.20	0.20	-

Private Colleges U.G.C.	155.00	5.00	-	31.00	1.00	-
matching share to Private Colleges						
Introduction of new faculties and new subjects	129.38	59.38	-	11.25	1.25	-
Non-aided private Colleges	176.84	0.00	-	45.72	0.00	-
to grants-in-aid						
Implementation of T.D.C.	492.01	0.00	-	70.00	0.00	-
Non recurring grants to various non-govt. colleges	0.00	0.00	-	0.00	0.00	-
For participation in conferences/seminars	10.00	0.00	-	2.00	0.00	-
Establishment of University Education Commission	0.00	-	-	-	-	-
Teaching through television	5.00	5.00	-	1.00	1.00	-
Rent of building of IGNOU	24.00	-	-	4.80	-	-
Regional Office						
Establishment of Coaching Centre for competitive exam for poor (Other than minorities & SC/ST)	5.00	5.00	-	1.00	1.00	-
Incentive grants to colleges	35.00	10.00	-	5.50	0.50	-
Establishment of autonomous colleges	10.00	0.00	-	2.00	-	-

These figures reveal that the State Govt. has not allocated the funds proportionate to the responsibilities shared by private degree colleges. A small sum has been provided for the creation of posts and infrastructure due to implementation of three year degree courses. A mismatch to this is the provision for 100 crores for the proposed new university at Lucknow and an outlay of Rs. 625 lakhs for the second campus of Lucknow University. It is surprising that a total sum of Rs. 70 lakhs has only been provided in 1992-93 for implementation of three year degree courses in private degree colleges which number nearly 400, while Rs. 50 lakhs are allocated for 1992-93 for the second campus of Lucknow University. No provision for incentive grants to private colleges has been provided in the Eighth Plan. Only a small sum of Rs. 5 lakhs have been provided for the total plan period for teaching through television while no provision has been made for an open university in the state. No attempt seems to have been made to improve education in private colleges through the grant of status of autonomous colleges in U.P. as only 5 colleges are proposed to be given that status during the entire plan period with only one in 1992-93 and one in 1993-94.

The scenario reflects very serious mismatch between objectives and grants outflow. While education is considered an important and effective instrument of human

resource development and is seen as one of the major pre-requisites for economic growth and national progress the proposed financial investment is in tune with the requirements. Higher education in India is largely funded from public exchequer and for this reason alone, it should strive for regional balance between universities and colleges and between Govt. Colleges and private colleges.

Annexure

List of Universities and University Level Institutions in U.P. (with the year of establishment in brackets).

- i) *Central Universities*
BHU (1916), AMU (1921)
- ii) *General Education State Universities*
Allahabad (1887), Lucknow (1922), Agra (1927), Gorakhpur (1957), Kanpur (1965), Meerut (1965), Kumaun (1973), H.N. Bahuguna (1973), Kashi Vidyapeeth (1974), Avadh (1975), Bundelkhand (1975), Rohilkhand (1975), Poorvanchal (1981).
- iii) *State Agricultural Universities*
G.B. Pant (1960), Acharya Narendra Dev (1974), C.S. Azad (1974).
- iv) *Engineering Universities*
Roorkee (1949).
- v) *Sanskrit Universities*
Sampurnanand Sanskrit (1958)
- vi) *Institutions deemed to be Universities*
Gurukul Kangri (1962), Dayalbagh (1981), IVRI (1963), CIH Tibetan (1989)
- vii) *Institution established under State Legislature Act*
Sanjay Gandhi PG (1983)
- viii) *Others*
 - a) Indian Institute of Technology, Kanpur
 - b) Institute of Management, Lucknow
 - c) Regional Office of IGNOU, Lucknow
 - d) Forest Research Institute, Dehradun

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Science As A Fine Art

Cochin University of Science and Technology held a Special Convocation to confer its first honorary degree of Doctor of Science on the eminent Scientist, Dr. E.C.G. Sudarshan in appreciation of his 'outstanding original and significant contributions to science, and particularly to theoretical physics. Dr. Sudarshan in his address observed, "I would like to share with you my conviction, after four decades of being a scientist, that science is akin to fine arts. Both involve high discipline, painstaking preparation, glorious insight and a deep gratitude for the richness of the universe that enables to find enjoyment and share it with others." Excerpts

The Nature of Science

Every day every one interacts with universe. This experienced universe reveals more of its structure and configuration, the more disciplined and systematic the act of observation is. It is convenient to find the common domain of our experience and identify it with our objective reality independent of any specific observer, or the time, orientation, location and inertial motion of the observers. Physical sciences concern themselves with this external objective observed universe. Science is the disciplined, refined perception of the universe and its ordering into laws and theoretical structures.

It is clear that physical sciences utilize the pooled experiences and discoveries of all scientists and is thus a social activity. The discovery by one scientist is not only his, but of the commonwealth of sciences. The observations of the universe include insights as much as meter readings or sense data. The theoretical aspects of science modify our perception in that we see that which we could have seen, but did not discern.

Methodology of Science

Much of the work of discovery in sciences is the result of controlled experiment. In a controlled experi-

ment, the relevant subsystem of the universe is identified and as much as possible, isolated. Such means as high vacuum, electrical and magnetic shielding and efforts to isolate mechanical disturbances are some of the methods of control. In cases where one deals with uncontrollable effects like gravitation or thermal contact, we try to allow for these by a few isolated parameters. The design of an experiment involves in an essential sense the separation of the universe into the experimental system and the outside world. In the latter we can control the events to our liking while inside the experimental system everything is according to rigid physical law. Needless to say, experimental design is a learning experience and involves systematically our scientific world view. The experimental system is causal; but the outside world, including the observer, has a limited amount of autonomy in that we can choose to do an experiment with the choice of initial conditions. We could oversimplify this and state somewhat inaccurately that we have the freedom to set up the experiment, but nature decides the subsequent events.

Physical Law : World as Process

The purpose of experimentation in science is to discover physical laws : these are the invariant cor-

relations between the relevant initial conditions and the final configuration. The physical law thus refers to the abstract correspondence and does not refer to any initial condition. To describe any concrete evolution of a system, we need to specify both physical laws and the initial conditions. The physical law is like a familiar play, say, "Hamlet", while any actual motion is like a performance with a particular cast at a particular time and place.

This breaking up of the world into an experimental system and the background, and the subsequent breaking up of a specific process into the physical law and the initial conditions enables us to recognize the greater degree of symmetry for the physical law. General principles like the principle of relativity are best expressed in terms of the physical laws rather than the physical events that are directly observed. For some decades we have known that conservation laws of physics (like the conservation of energy, of electric charge, of momentum and of angular momentum) can be related to symmetries of the fundamental laws. In the more ambitious theories it is the symmetry that decides the physical law and hence the physical model. The best known example is the general theory of relativity where the requirement that the laws should be unchanged under general coordinate transformations suggest that the laws are expressed by the tensor relationships; together with the correspondence with Newtonian gravitation these tensor equations furnish the specific law of general relativity and even of relativistic cosmology.

This emphasis on the dynamical law urges us to view the world as a flow than as a configuration. The substance (or, more generally, the configuration) is the carrier of the flow. The world is a process, not stuff! Our world view is thus dramati-

cally changed, from watching the actors to enjoying the play : from stuff to flow. Flow is manifested by the stuff, like the play is performed by the players. The adept viewer is able to "see the play" as well as the enactment.

Science as a Social Activity

Science is a commonwealth of knowledge and as such the results of refined careful experimentation and theory building should be communicable and communicated. Science is not merely personal knowledge but is a social activity. It is the communicated and recognized discovery that is science. Of course, if we insisted on communication in common parlance, it would limit the abstraction that can be communicated. So common language gets extended by carefully chosen new imageries, and a technical language gets formed to facilitate the communication. This new language contains much of mathematics, some of it quite abstruse. Thus, while the technical-mathematic language facilitates scientific communication, it erects some barriers from ordinary people. Unless carefully done, popularizations distort and obscure science rather than illuminate it.

Does Science Have a Purpose?

What is the purpose of science? Since science involves the refined perception of the world and communicating it to others, science is not only for the individual scientist's enjoyment. In this it is very close in spirit to fine art where everyday actions and observations are refined to the point that it is a separate reality : yet this almost separate reality is a finer appreciation and is a powerful mode of perception. The fulfilment of science is in the twin actions of enjoyment of the controlled refined perception as well as its creative communication.

One of the side benefits of science is the application of science to technology to make us fashion new tools as well as to utilize natural

processes for the achievement of technical objectives. Natural law provides the constraints on physical processes much as the body of the flute and its stops constrain the air flow; yet it is this set of constraints which obtain the sweet notes of the flute. The creativity in technology is in seeing what can be done to use the constrained processes of nature to fashion the desired functionality. It may be compared to commercial art or to anatomical sculpture in medical education, in its relation to the fine arts of painting and sculpture.

Like in the fine arts in science, too, we tend to expand, and expand on, some aspects of natural law. In studying photo-electric effect we need a superclear metal surface with light of well-defined frequency and study of the electrons emitted from the metal surface irradiated with light. In "Hamlet" we take a commonplace circumstance in a disturbed young man's life and study the psychodrama that dominates the life of many people. The simplest mechanics idealize the motion of pebbles and ripples where communing real numbers control the description. This is like the simplest music rhythm that punctuates and ornaments a song. When mechanics is extended to the subatomic domain, we have to use quantum theory with its noncommuting quantities like the use of a complex melody which is to simple rhythm as classical physics is to quantum physics. And just as music in its acme leaves all thought of its structure and word meaning, so does physical theory in its zenith appears to relate to purely abstract constructs. But just as complex musical melodies can be communicated to a select few, but be appreciated by many, the most abstruse physical theory is grasped by the select few but many more appreciate it and use it.

There are many sculptors and sculptures but Rodin's "Thinker", for example, has evoked a universal recognition in people of many cultures. In the same way some scientific theories like the theory of relativity of Einstein and Poincare

has evoked universal admiration, and in it people of many other disciplines find echoes for their own disciplines.

Not everyone that enjoys music can become a creative musician or a concert musician. Nor do we think that people should all be taught music. But we do feel that music appreciation should be encouraged. Further that a creative musician, like a scientist, should be supported by society at large and continue to produce music. The concert musician who performs the music to the people at large should be rewarded; and so also the technologist who applies the sciences to needs of society as perceived by the technologist. The performing musician may be more readily recognized and applauded and perhaps rewarded by society. But behind and antecedent is the creative musician who is the root from which the performing musician is the branch that provides the fruit. To reap the fruit we must nourish the root, in the language of Peter Sellers in his role as Mr. Chauncey Gardner in the movie "The Way Things Were". There is also the felicitous metaphor of the aswatha tree in the eighteenth chapter of Bhagavad Geeta where the tree has branches below and roots above !

Critics of Science

It surprises me somewhat when students complain that physics is difficult, that physics is uninteresting, that physics has not much relation to life. What could be more relevant or more interesting? A smaller number complain similarly about chemistry or the life sciences. But to me it is like someone asking : What is the use of fine art, why devote many years of a person's life of mastery in one area? They say : What is the relevance of dance, music or sculpture in a world full of strife, scarcity and suffering?

Even more surprising and somewhat disappointing are more sophisticated critics who charge

that science is dehumanizing us and that science, by way of technology, is polluting the world and filling it with weapons of destruction. The written word and methods of modern communication have caused most of the fanatic destructiveness : but, does that warrant blaming the written word or techniques of mass communication? Does abandoning the comfort of modern technological civilization restore us to harmony? Do not these same critics use the fruits and the methods of science to propagate their own world view? A sharp knife in the hands of a surgeon can do great good but it can also be used as a weapon of destruction.

Some degree of confusion exists in the public about the separate nature of science and of technology. In science the value is in ever-expanding discovery, insight and experimentation. Reproducibility is needed and is crucial but is the improved repetition and reliability that is of value. Technology comes into its own when it creates wealth, con-

venience and comfort; if it fails to do these it is only in its beginning. This is true whether it is the bullock cart or nuclear energy. Technology is highly visible both because it is extensive and because its end-users are the public. This contrasts with science where the work is not very visible and not necessarily critically appreciated by the public. It is easy for those in charge of technology to claim to be scientists and having taken on the disguise of a scientist, go on to appropriate not only its resources but also its representation to the public. In such cases the public often blames the ills of ill-managed technology on science.

Epilogue

What are the goals of life? Why do we toil and trouble ourselves: it is to enjoy, to know, to observe to be free. Fine arts are an expression of these goals of life. What we enjoy alters us; and we seek the enjoyment that endures. What we see at first is not the final vision; greater skill and

maturity enable us to penetrate appearances to cognize a deeper reality. The act of observation is shallow without critique, and the more refined our observation and the more it is supplemented by its context in the scheme of things, the better our observation. The real is hidden from the undeserving, the undisciplined. True freedom comes not from a disregard of the constraints but by skillful obedience to the constraints. Art illuminates and empowers us; so does science. It is my belief that Narayana Bhattatiri's invocatory hymn :

*Sandrandavabodhatmik amanuṣa
nūtan*

*kaladesavadibhyam nirmuktam-
nityamuktam*

*nigamasatasahasrena nirbhasya
manam*

*aspastam drśyamatre punaruru
pūṣartatmakam*

*brahmatatvam tattavad bhati sak-
sat.....*

is most appropriate of deep cognition whether in science or in fine art.

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Anna Varsity Convocation

The Special Adviser to the President of the World Bank, Mr. V. Rajagopalan, complimented the Central Government for initiating a "major transformation of development strategy" and liberalising industrial, trade and financial policy changes in what was once a closed and regulated economy in the world. He was delivering the address at the 13th convocation of the Anna University. He said the reform agenda ahead remained formidable and difficult policy changes were yet to be implemented. However, what was accomplished in the past 10 months was impressive, and if this pace was maintained over the next three or four years, "India could become one of the world's most dynamic economies during the second half of the 1990s and beyond."

Mr. Rajagopalan, who is also a Vice President of the World Bank, said there had been a marked change in the basic approach to development sweeping the world now. While Governmental decision making was still important, the stress now was on providing an enabling environment where people could do more to better themselves rather than expect the Government to address all problems.

Competition brought enormous benefits in terms of efficiency and to forego these would "sentence India to continued mediocre economic performance and low living standards," he said. The shift now was from a supply-driven orientation to demand-driven one, he said, stressing four issues – productivity growth, foreign innovations, infrastructure, and local financing support for entrepreneurs.

Elaborating on these, Mr. Rajagopalan said India attracted relative-

ly small amounts of direct foreign investment and the contrast to China was striking. Japanese technological success had depended critically on their being open to ideas developed elsewhere, and "it is such openness that we need to cultivate now".

Engineers and scientists had an important role to play in defining a national vision, in educating the public and decision makers, and in working with professionals in other disciplines to create cost-effective mechanisms for realising this vision. The professional ought to earn a seat at the policy making table. Any improvement of efficiency and quality should come not only from the students but also from their teachers. "Good teachers are always good students. They never stop learning". It is the teacher who can bring the excitement and the challenges of the real world to the classroom." A partnership of teachers, students, and the various productive units in our economy is our best hope for sustained progress", he added.

In his report, Dr. M. Ananda-Krishnan, Vice-Chancellor, referred to the achievements of the university during the past year and said that with 873 women students out of a total of 5221, the Anna University had the largest number of women studying engineering and technology courses in the country.

The degree of Doctor of Science (honoris causa) was conferred on Mr. V. Rajagopalan and also Mr. P. Sivalingam, the first Vice-Chancellor of the university. The Governor and Chancellor of the University, Mr. Bhisma Narain Singh, presided over the convocation in which the Education Minister and Pro-Chan-

cellor, Dr. C. Aranganayagam, participated. A total of 690 candidates in person and 1713 in absentia took their degrees at the convocation and this included 33 who took their Ph.D. degrees.

'Exploration in Poe' Released

Well-equipped libraries and sophisticated laboratories are, no doubt, necessary for ensuring quality in research and advanced studies, but inadequacy of these facilities need not discourage academicians from engaging themselves in meaningful research", said Dr. K. Jayashankar, Vice-Chancellor of Kakatiya University. He was releasing a book on 'Exploration in Poe' written by Dr. D. Ramakrishna, Reader in English of the Kakatiya University in Warangal recently.

Expressing concern over the deteriorating standards in research, Dr. Jayashankar observed that most of the research activity in the universities had become repetitive and degree oriented rather than original and innovative.

He paid compliments to the teachers and researchers at the university who were making best use of the facilities available, however limited they might be. The Vice-Chancellor assured the faculty all possible support and encouragement in every effort aimed at qualitative transformation of research programmes at the university.

P.G. Course in Forensic Engg

A P G Diploma Course in forensic engineering has been introduced in the Anna University. According to the Director of the Forensic Sciences Department, Prof. P. Chandrashekhara, 20 students had been admitted to the course which commenced a month ago. The law of

crimes and the law of contract had been included as subjects. Graduates in engineering and architecture were eligible for admission.

It is the application of the art and science of engineering in the jurisprudence system, requiring the services of legally qualified professional engineers. This branch of science may include investigation of the physical causes of accidents, claims and litigation, preparation of engineering reports, testimony of hearings and trials in administrative or judicial proceedings and offering of advisory opinions to assist in resolution of disputes affecting life or property.

The discipline started developing in the Western countries about a decade ago. Citing an instance, Prof. Chandrashekharan said a U.S. court had accepted the opinion given by forensic engineers that the position of a road in a hilly area was responsible for an abnormal increase in the groundwater level, resulting in damage to structures.

Engg. College Convocation

Delivering the Convocation address at the Dr. MGR Engineering College at Madhavoyal, near Madras, the Tamil Nadu Education Minister, Mr C. Aranganayagam, said that the managements of self-financing professional colleges should use the funds got from students to improve facilities. This was what the Government expected of the self-financing institutions and such a move would also prevent criticism from the public.

Tracing the growth of self-financing professional colleges in the State, Mr. Aranganayagam assured them that the Government would not harass or punish them. He administered a pledge and gave away degrees to students.

Dr. S. Sathikh, Vice-Chancellor, Madras University, who presided, said a number of self-financing

professional colleges in the State had achieved good growth in the last few years.

Dr. T.R. Natesan, Director of Technical Education, said the increase in the number of professional colleges had helped in promoting entrepreneurial skills among youth.

In his report, Dr. V. Srinivasa Gopalan, Principal, said of the 136 students who appeared in the May 1992 examinations, 104 took their degrees. Eighty five secured first class. Three students had secured university ranks.

Promoting Urdu Publishing

The Afro-Asian Book Council (AABC), New Delhi recently participated in the 7th Lahore International Book Fair. It exhibited 170 books published by its members.

During the course of fair meetings were held between the representatives of the book industry in Pakistan and Chemicals and Allied Products Export Promotion Council of India (CAPEXIL). The following broad understandings were reached :

1. AABC will initiate a structured dialogue with Lahore Booksellers and Publishers Association, Urdu Publishers from Pakistan, All India Urdu Publishers Association, CAPEXIL and Federation of Publishers and Booksellers Associations in India, which would help in strengthening Urdu publishing in the region through mutual cooperation. This dialogue will also explore ways in which free flow of information within the South Asian region can be promoted.

2. AABC will organise in Pakistan an author development workshop on the lines of the successful workshop it had organised in Lahore in April 1992.

3. Mr Salim Malik, convenor of the Fair, will explore the possibility of establishing a chapter of the Council in Lahore.

The AABC exhibit at the Fair received a very encouraging response. Visitors were impressed by the quality of books being published by the Council members. The visitors were also pleased to see the effort being put in by AABC to promote intellectual self-reliance in the Afro-Asian region.

As a consequence of the discussion held in the meeting in Lahore, the representatives of the Council met in New Delhi with the office-bearers of the All India Urdu Publishers and Booksellers Association and Anjuman Taraqqi Urdu (Hind) in which the *modus operandi* of organising an Indo-Pak Urdu Conference and an Urdu book exhibition was discussed. It was decided that the two events be organized under the auspices of the AABC with cooperation from concerned organisations in India and Pakistan. It was also agreed that a Good Offices Committee comprising the representatives of the publishing community in the two countries be set up to strengthen the ties between the publishers of the sub-continent and to remove bottlenecks through mutual consultation.

Osmania University Convocation

The Vice-President, Mr K.R. Narayanan called for a more intelligent and healthy participation by students in the national political process. He was delivering the 69th convocation address of Osmania University at Hyderabad recently. The Vice-President said students should take greater interest in social activities, including politics, so as to bring about a real transformation in the country. "If you are not to be ruled by the people who are inferior to you, it is important for you to

participate in politics, which should be without violence and causing destruction to the academic process," he said.

Laying emphasis on scientific education which provides solution to many problems plaguing the society, Mr. Narayanan said science had to be pursued and its application should be intended for the good of the society. He said the stress during the last 40 years after Independence was on scientific education and now technology needed to be vigorously pursued.

Making a fervent appeal to the youth to uphold the tradition of tolerance as preached by the *gurus*, he said, "it is in the universities that the solutions for most problems the country is facing today lay." He urged the students to set an example to the elders who had not been able to translate into reality the teachings of the *gurus*, for the creation of a new India of the 'classical type'.

Quoting Jawaharlal Nehru, Mr Narayanan said universities should not become houses of 'narrow bigotry'. He said, sadly the country was departing from broad liberalism encompassing tolerance and mutual respect for each other.

The Governor, Mr Krishan Kant, who is also the Chancellor of the University, awarded the honorary doctorates to Mr Vittal and Prof. Ram Reddy. He awarded Ph.Ds to 640 candidates and gold medals in M.Phil and postgraduate courses during 1990-91 and 1991-92.

The Vice-Chancellor, Prof. M. Malla Reddy in his report said the university had introduced many innovative courses like Instrumentation in B.E., Electronic Warfare in B.Tech., Food Technology and Pharmacy. As a centre for the pursuit of excellence, Osmania had also been attracting a number of foreign students, he said, adding that such explosion of student population had created a new challenge.

News from Agricultural Universities

Workshop on Forestry Course Curriculum

A two-day National Workshop on Forestry Course Curriculum was recently organised by the Dr. Y. S. Parmar University of Horticulture and Forestry, Nauni to review the course curriculum of forestry education. Sponsored by the Indian Council of Agricultural Research (ICAR), the workshop was inaugurated by Dr. B. R. Sharma, Vice-Chancellor of the host University. In his address Dr Sharma called upon the scientists to review the course curriculum of forestry education according to the requirements of the society. He added that today forestry education and research was very important specially when the sword of ecological imbalance was hanging over the world due to increasing population and heavy industrialisation. He called this occasion a historical moment in the history of forestry education and research when the scientific community from all over India had assembled to review the courses of forestry education. Dr. Sharma who chaired the first technical session said that the real aim of education could not be fulfilled without developing the communication skill, knowledge skill, reasoning ability, application and job oriented ability amongst the students.

Dr. P. L. Gautam, Dean College of Forestry, said that the forestry education was started in Europe during 1785, USA 1862 and in India 1867. He said that Y.S. Parmar University had played a lead role to start M.Sc Forestry in 1976 and Ph.D. in 1983. University also started MS Agro Forestry from this session. He added that presently 11 universities of the country were providing B.Sc. Forestry degrees to the students.

During the course of deliberations it was felt that uniformity in

syllabus and grading formula was a must. Extensive training and practical knowledge was required in forestry education to make a person fully equipped. Instead of opening new institutions there must be an accreditation system for the existing institutions whether they be fully equipped to provide the quality education or not. If not they should not be allowed to produce the unskilled manpower but good institutions should be strengthened. "We must know the professional requirements for which manpower planning cell should be opened. Duration of the course should be 4 years. Physical training for the protection from animals is needed. Eco philosophy under new education should be introduced in the course. Vocational course must be included to make the forestry education job oriented and more professional" he said.

One hundred scientists from various parts of the country including Padma Shri Dr. K. N. Tiwari, Ex President, Forest Research Institute, Dehradun, Dr. V. Ganaprakasam, Vice-Chancellor, Tamil Nadu Veterinary and Animal Sciences University, Madras, Dr. S. Chinnamani, Asst. Director General (Agroforestry), ICAR participated in the workshop.

Private Enterprise & Farm Research

The World Bank Vice-President, Mr V. Rajagopalan, said that India would have to involve its private sector in agricultural research and education to meet the long-term farming and food needs of the country. He was delivering the 24th Lal Bahadur Shastri Memorial lecture at the Indian Agricultural Research Institute in New Delhi

recently. He said agricultural research and technologies, currently generated almost exclusively by institution in the Government sector, were not cost-effective.

Mr Rajagopalan, who is also the chairman of the Consultative Group on International Agricultural Research, that manages global institutions like the International Rice Research Institute at Manila, was of the view that the private sector could make farm research cost-effective. He felt that it was time for the Indian Government to examine how the agricultural research system in the country could be "consolidated" to produce centres of excellence.

He did not visualize finalization of a firm research policy right now. Rather, he said, he would look forward to the Government chartering "the broad parameters of change in a tentative manner".

Mr Rajagopalan said the future demands on the agricultural system in the country would change on the basis of the consumption patterns weighed heavily in favour of high-value crops.

Pulse Day at MPKV

"In order to increase the production of pulses the farmers need to be trained in pulse production technology. The pulses require less irrigation, and give better yields. These crops improve soil fertility. Therefore farmers should grow pulses," said Shri Shankaraoji Kale, Member of Parliament, on the occasion of pulse day organised at the Mahatma Phule Krishi Vidyapeeth, Rahuri. There was an urgent need to organize training programme on pulse production technology for the benefit of farmers, he added. The programme was organized as part of National Pulse Improvement Project of the University. Dr. S.K. Dorge, Vice-Chancellor of MPKV, who presided, said that research

programmes of the Mahatma Phule University were based upon the needs of the farmers. He exhorted the scientists & farmers to reduce the cost of cultivation by following appropriate management practices.

On this occasion Shri Suresh Patil, Executive Member of MPKV, released a folder on black gram (Udid TPU-4) and another folder on Bean (HPR-35). Pulse breeder Dr. R.B. Deshmukh reviewed the pulse research carried out by the University and emphasised that the production and productivity of Gram and Arhar had increased. In order to keep the increasing trends of pulses production it was necessary to adopt the improved varieties of pulses, he added. Shri Jayant Deshmukh, Principal Agricultural Officer, Ahmednagar urged that adequate credit facilities, should be provided for growing pulses. On the occasion progressive farmers from various parts of the state narrated their experiences. They said that farmers must take rotation crops of pulses and should frequently visit the University for getting information. The farmers should adopt the varieties evolved by the university because these require less irrigation. They appealed to the University scientists provide guidance to farmers on different crops.

New Crop Varieties Developed at HAU

To develop economically viable and technical feasible technology for increasing the production of different crops under various agro-climatic conditions of the state, the Chaudhary Charan Singh Haryana Agricultural University has introduced a new research scheme under which the experts have evolved several high yielding, early maturing and disease resistant varieties of pulses and oilseed crops.

According to the Vice-Chancellor, Dr A.L. Chaudhry, the newly

developed varieties include RH-781 of mustard, RH 8113 and 819 of Raya, Haryana Channa No. 1 and HG 86-143 of gram have been found very popular among the farmers of the state because of their extra soil salinity and frost resistant qualities as well. Among the other varieties, bajra hybrid HHB-67 and HHO-68, basmati rice, HKR-120 have also been found equally suitable for the different agro-climatic areas of the state. These varieties are equally suitable for the wheat and rice crop rotation.

Keeping in view the importance of researches for the overall prosperity of the state, the University has enhanced the budget allocations as well. Presently, a total number of 375 research projects are in operation at the university for which an amount of 40 percent of the total budget of the university has been earmarked.

Dr. Chaudhry said that a Biotechnology Centre had been established at the university to give due attention to the enhancement of production of fruits, vegetables and livestock production in the state. In this centre, the scientists are engaged in identifying the unnatural ways and means like tissue culture and embryo transfer techniques etc. for increasing the production at desired level.

We Congratulate

Dr. Kirti Singh who has taken over as Vice-Chancellor of the Indira Gandhi Krishi Vishwavidyalaya, Raipur.

News from UGC

Countrywide Classroom Programme

Between 22nd March to 31st March, 1993 the following schedule of telecast on higher education through INSAT-1D under the auspices of the University Grants Commission will be observed. The programme is presented in two sets of one hour duration each every day from 1.00 p.m. to 2.00 p.m. and 4.00 p.m. to 5.00 p.m. The programme is available on the TV Network throughout the country.

Ist Transmission

1.00 p.m. to 2.00 p.m.

22.3.93

"Liquid Crystals-I"

"Management Functions and Behaviour : Decision Making"

23.3.93

"Black Diamond – Buckminster Fullerence"

"Ways of Thinking – III. World of Waves"

"Reconstructive Microsurgery"

24.3.93

"Conservation of Indian Fruit Bats"

"Microbiology of Milk – I"

"Eyes in the Sky – Remote Sensing-III"

25.3.93

No Telecast

26.3.93

"Communicating Skill : Story Telling – I"

"The Dying Dal Lake"

"Career Counselling – I The Humanities and Social Sciences"

"Zero Gravity Caravelle"

27.3.93

"Glorious Past, Uncertain Future"

"The Pursuit"

"Week Ahead"

28.3.93

No Telecast

29.3.93

"Liquid Crystals – II"

"Management Functions and Behaviour : Leadership Styles"

"Wonder Working Light"

30.3.93

"Flocculation"

"Ways of Thinking – IV Spheres of Sound"

"Uses of Isotopes in Nutrition"

31.3.93

"Wonder World of Cells – I"

"Microbiology of Milk – II"

"Remote Sensing and Development"

IInd Transmission

4.00 p.m. to 5.00 p.m.

22.3.93

"Origins of Quantum Theory : From Planck to Bose –I Max Planck"

"Of Figures And Columns : The World of Chartered Accountants – II"

"Pen Pals"

23.3.93

No Telecast

24.3.93

"Vampire Bat"

"Soil Mechanics In Practice"

"Questioning Rock Art"

25.3.93

No Telecast

26.3.93

"Glorious Past, Uncertain Future"

"The Pursuit"

"The Week Ahead"

27.3.93

No Telecast

28.3.93

No Telecast

29.3.93

"Origins of Quantum Theory : From Planck to Bose – II Albert Einstein"

"Small Steps To Big Gain"

"Vermicompost-I, The Might Of The Small"

30.3.93

No Telecast

31.3.93

"Unveiling Antarctica"

"Trends In Brain Research"

"Hypnotherapy – Medical Uses of Hypnotism – II"

News from Abroad

Privatise Oxford

Oxford should go private to safeguard academic autonomy from Government interference and "bureaucratic tutelage", says Nevil Johnson, professorial fellow of Nuffield College, Oxford and up to 12 more of Britain's top universities, could improve their destiny by withdrawing from the Higher Education Funding Council (HEFC) for England and increasing their income by doubling the student fee, he adds.

The controversial privatisation theory has been suggested tentatively before, but Mr Johnson sets out in detail how it could be made to work financially for Oxford.

The university currently receives public funding totalling £120 million including £65 from the HEFC grant, £25 million from university fees and £30 million from colleges fees.

But the immediate financial cost of independence would be only about £80 million, assuming the university would continue to receive half of its college fee income from public support, he says.

This could be found by doubling the fees charge, yielding an additional £70 million. Further funds could be raised from private donors and by examining the current financial relationships between colleges – the main holders of accumulated wealth – and the university.

Brilliant students unable to pay the substantial fee increase would be helped by scholarships which the university would invest in developing. Mr Johnson said: "We have quite a lot of clever applicants from families who have been able to send them to the best public schools.

Many could continue to pay those fees."

Independence would offer the university freedom to manage its own affairs according to its own values, and would release it from "external bureaucratic demands" and "manipulative conditions" associated with state funding.

He writes: "Academic freedom – and therefore, ultimately, academic standards and intellectual achievement – are exposed to serious threats in Britain..... primarily from totally misconceived policies which treat universities like industrial production units."

A spokesman for the university said: "The autonomy argument in a strong one but it would be a very different kind of Oxford and need a considerable rethinking of priorities."

UN University HQ Inaugurated

United Nations Secretary-General Mr Boutros Boutros-Ghali, recently inaugurated the new per-

manent headquarters of the United Nations University (UNU) in Tokyo. The construction of the UNU headquarters building by the government of Japan was completed in 1992.

The UNU was established with the approval of its charter by the UN General Assembly in December 1973 to be an international community of scholars engaged in research, advanced training and the dissemination of knowledge related to the pressing global problems of survival, development and welfare.

It also has research and training centres in Helsinki, Maastricht and Macau. Another is to be located in Accra. An Institute of Advanced Studies to be located in Tokyo and another research and training centre in Barcelona are in final stages of preparation.

The UNU also has major research and training programmes in Cambridge, Massachusetts, Caracas, Venezuela, Lusaka, Zambia and Fukuoka, Japan.

The results of the university's work are disseminated in policy papers, scientific publications and in five professional journals. Postgraduate training has been provided to more than 2,000 UNU fellows from developing countries.

CORRECTION

The paper 'Cost of Higher Education' published in the 22 February 1993 issue of *University News* was not written by C.R. Mitra as erroneously mentioned. It had been authored by M.S. Ramamurthy former Joint Secretary, Association of Indian Universities and Editor, *University News*. The mix up is deeply regretted.

Champion Colleges Tournament

The first 'Champion Colleges' Hockey Tournament was organised by the Association of Indian Universities in collaboration with the Jawaharlal Nehru Hockey Tournament Society during 12 - 19 February, 1993 at Shivaji Stadium, New Delhi. 16 Champion Colleges Teams of first four zonal qualifying universities in the Inter-University Tournament were invited to participate.

The tournament has been conceived to bridge gap between the junior and the senior level hockey players. It was felt necessary that to improve the standards of hockey in India an intermediate level tournament at the college level should be started. It could work as a filler between school going students and the university level players.

To generate interest in the tournament and attract keen participation by the college players the Steel Authority of India (SAIL) offered prize money to the extent of Rs. 2.20 lakhs. Besides this handsome amount Rolling Trophies for Winners and Runner's Up were also instituted. The SAIL also provided individual prizes and mementos. Necessary travelling, boarding and lodging and transport facilities to all the teams were provided by the organising committee constituted under the chairmanship of Prof Saiyid Hamid, Former Vice-Chancellor, Aligarh Muslim University. The break-up of the prize money was as follows :

i)	Winners	1,00,000
ii)	Runner's Up	60,000

iii)	3rd Position Holder	30,000
iv)	4th Position Holder	10,000
v)	Coach of the Winning Team	5,000
vi)	Six Best Players	2,500 each

The tournament was declared open by Shri M.S. Bhagwat, Secretary, Department of Youth Affairs & Sports. The tournament was played for 8 days on league-cum-knock out basis. N.A.S. Colleges,

Meerut, won the tournament. Pachaiyappa's College, Madras, Sri Aurobindo College, Delhi and Khalsa College, Amritsar, were the runner's up, IIIrd & IVth position holders respectively. Shri Ramesh Chandra, Administrator, New Delhi Municipal Committee hosted a reception in the honour of the visiting teams. Prof. K.B. Powar, Secretary General, AIU, was introduced to the finalist teams, i.e. N.A.S. College, Meerut & Pachaiyappa's college, Madras. Shri S.N. Das, Director (Personnel) gave away the cash awards to the winners. Prof S.K. Agrawala, Former Secretary General, AIU gave away the trophies and mementos to the teams.

South Zone Youth Festival

The South Zone Inter University Youth Festival sponsored by the Association of Indian Universities (AIU) and the Department of Youth Affairs and Sports, Government of India was recently held at the Calicut University, Kozhikode. The Festival was inaugurated by Kerala State Education Minister, Shri E.T. Mohammed Basheer. More than 600 student Youth artists from 22 universities participated. The competitions were held in the events of Music, Dance, Theatre, Fine Arts and Literary Activity.

Following the inaugural function the classical dance competition was held in which Andhra, Calicut, Mahatma Gandhi, Mysore and Kerala Universities participated. The dances performed by Calicut University (Mohiniattam) and Mahatma Gandhi University (Kuchipudi) drew instant applause from the audience.

The Skit, Mime, One Act Play, Group Dance, Light & Classical Vocal Solo Competitions were held on the second day.

Of the 19 teams, which participated in the skit competition, Kuvempu University, Mahatma Gandhi University, Kerala University and Kerala Agricultural University won the appreciation of the audience. This was followed by the Mime competition in which 16 presentations focused on the evils of the dowry system.

The One Act Plays, most of which were dialogue oriented, depicted atrocities on the Indian woman, power politics and communalism. The presentations of Mahatma Gandhi University and Kerala University were adjudged the best two entries and recommended for the National Festival.

In the Group Dance even, University of Agricultural Sciences, Dharwad, the Bharathidasan and Mysore Universities drew spontaneous audience applause. The Dance event of University of Agricultural Sciences, was the notable one which depicted the hunters; jubilation on killing of a deer in the best of 'Khasi' traditions.

The light and classical vocal soloists rendered melodies, which sounded just out of this world. The Young Vocalist from Telugu University emerged the best for her fascinating song.

12 teams participated in the painting competition. The paintings

which portrayed 'A Festival' or 'A Roadside Scene' attracted maximum number of entries. This was followed by classical instrumental solo, the Quiz, poster making and cartooning competitions.

In the Western vocal solo and the western group song sections Mahatma Gandhi University spell bound the audience by their sterling performance. Bharathidasan and Mysore Universities grabbed the limelight in the Indian group song competition. Mahatma Gandhi University, Kottayam and Karnataka University, Dharwad both excelled at Clay Modelling.

Rangoli was the new addition to the Unifest' 93 competitive items. It is popularly known as 'kolam' in Kerala and Tamil Nadu, 'Alpana' in Bengal, 'Moggu' in Andhra Pradesh and 'Chowk Poorna' in Uttar Pradesh. Manomaniam Sundaranar University, Tirunelveli and Bharathiar University, Coimbatore, proved their strength in this event.

At the valedictory function the State Minister for Youth & Sports was the Chief Guest who gave away the prizes. The Mahatma Gandhi University, Kottayam emerged as overall champions while Kerala University finished a close second.

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Inter University South Zone Youth Festival - 1992-93

Result

1. Classical Vocal Solo	: 1.	Karnataka University Dharwad	11. One Act Play	: 1.	Mahatma Gandhi University, Kottayam
	2.	Kerala University		2.	Kerala University
2. Classical Instrumental Solo - Percussion	: 1.	Kerala University	12. Skits	: 1.	Mahatma Gandhi University, Kottayam
	2.	University of Agril. Sciences, Dharwad		2.	Karnataka University, Dharwad
3. Classical Instrumental Solo - Non-percussion	: 1.	Kerala University	13. Mime	: 1.	Kerala University
	2.	Andhra University		2.	Alagappa University
4. Light Vocal Solo	: 1.	Telugu University	14. On the Spot Painting	: 1.	University of Calicut
	2.	University of Calicut		2.	Madurai Kamaraj University
5. Western Vocal Solo	: 1.	Mahatma Gandhi University, Kottayam	15. Collage	: 1.	Mahatma Gandhi University, Kottayam
	2.	Madurai Kamaraj University		2.	Bharathidasan University
6. Group Song - Indian	: 1.	Bharathidasan, Tiruchirappally	16. Poster Making	: 1.	University of Calicut
	2.	Mysore University		2.	Karnataka University, Dharwad
7. Group Song - Western	: 1.	Mahatma Gandhi University, Kottayam	17. Clay Modelling	: 1.	Mahatma Gandhi University, Kottayam
	2.	Bharathidasan University		2.	Karnataka University, Dharwad
8. Folk/Tribal Dance	: 1.	University of Agril. Sciences, Dharwad	18. Cartooning	: 1.	Karnataka University, Dharwad
	2.	Bharathidasan University		2.	University of Calicut
9. Classical Dance	: 1.	Calicut University	19. Rangoli	: 1.	M.S. University, Tirunelveli
	2.	Mahatma Gandhi University, Kottayam		2.	Bharathiar University, Coimbatore
10. Quiz	: 1.	Kerala University			
	2.	Mahatma Gandhi University, Kottayam			

Overall Championship Trophy : Mahatma Gandhi University, Kottayam

Runners Up Trophy : Kerala University, Kerala

Organising Tutorials

G.R. Sudame*

M.M. Pattanshetti, *Designing and Organising Tutorials in Colleges and Universities*. Davangere, You Need Publications, 1992. pp III + 116. Rs. 150/-

The university education system in India has grown phenomenally since 1947, after the country attained Independence. About four million students are catered to by over 200 universities and 7000 colleges at present. With a few notable exceptions, a majority of colleges organise their instructional activities through lectures given to large number of students in crowded classrooms. Needless to say that mere lecturing hardly leaves any scope for meaningful interaction between the teacher and the students. There is no way to find out if the students, listening the teacher's lecture passively, have learnt anything. This unitrack system of instruction at the higher education stage has been adversely commented upon by the several commissions and committees from time to time. Remedial measures have been suggested, which mainly focus upon organisation of small group interactional sessions between teachers and students to facilitate individual attention to students' difficulties. The University Grants Commission (UGC) has strongly emphasized the organisation of tutorials to supplement teaching through lectures in colleges. But, the average college teacher is not trained to organise tutorials and other small group interactional activities. In this context, Pattanshetti's publication is a welcome addition to the literature on

improving instruction at the higher education stage in India. The book consists of eight chapters, which besides discussing the concept of tutorials, their need and importance, focus in detail upon practical aspects of their organisation in colleges.

The first introductory chapter surveys the growth of higher education in India, present condition of teaching in colleges and attempts by the UGC and other agencies to improve the standards of teaching in higher education, including the guidelines regarding workload of various categories of teachers. The author has pointed out that as per the UGC guidelines, both undergraduate and postgraduate teachers are expected to devote four hours per week in conducting tutorials. Chapters two and three discuss the concept of tutorials, their meaning and nature, objectives, advantages, need and usefulness, with supportive quotations from many sources. According to the University Education Commission (Radhakrishnan Commission), tutorial instruction means that a student meets a teacher, at least once a week, for private or personal advice and guidances. Tutorial can be described as face to face contact between a teacher and small group of students organised periodically to solve the academic difficulties of students. Pattanshetti has developed an operational definition of tutorial considering economic, academic and other factors in the country. According to his definition, the tutorial is a group discus-

sion based on the content presented in the previous lecture classes in that particular subject, an essay or other material written by the students or any question raised by the teacher or students. The students may discuss about assignments, get clarifications to their doubts and permitted to develop writing and oral skills. The important objectives of tutorial, according to the author, are to establish cordial relations between teachers and students, to provide remedial instruction, to supplement the classroom lectures, to encourage the students to familiarise with textual and other reference materials, to motivate them to express clearly and effectively and thus maximise learning in a relaxed atmosphere in the small group. The important advantages of the tutorial are the opportunity it offers to both the teacher and the taught to think out different teaching learning strategies for preparing assignments, conducting discussions, solving academic difficulties and problems, etc. Besides, unlike the lecture session, a student is free to ask for any clarifications and raise questions in the tutorial.

Education Commission (1964-66) has suggested a significant reduction of formal instruction and a corresponding increase in tutorial work, group discussions, seminars and independent study. As there is hardly any scope in a formal lecture class for the students to express their own ideas or raise questions, tutorials are a must in colleges, especially for first year students. The author has found out that in Davangere city many students do not read even the prescribed textbooks, but rely on lecture notes or cheap guides. In such a situation, organising tutorials is not only urgently needed, but appears to be the only solution to the incomplete and inefficient instruction through lectures.

Chapters four, five and six describe in great detail the size of

*Former Professor of Education,
M.S. University of Baroda.

the tutorial batch, framing the tutorial time table and strategies for conducting tutorials. Though the book is addressed to higher education teachers all over the country, the discussion regarding the practical aspects of designing and organising tutorials is limited to Karnataka State only with illustrations from the author's own college. As expected Pattanshetti ends with practical limitations, such as number of classrooms and teachers available, to arrive at the optimum size of the tutorial batch, organisation procedures and strategies for conducting tutorials. A lot of space is devoted to detailed time tables, attendance sheets, yearly cycle for organising tutorials, etc. with examples from the author's colleges.

As individual attention to each student is necessary in a tutorial class, the tutorial batch should ideally consist of a minimum number of students. What is the optimum number; five, ten, fifteen or twenty? Should all tutorial batches be of the same size? There cannot be any definite answer to such questions. The size of the tutorial batch should be based on certain considerations such as instructional objectives, size of available rooms, teacher's role-domineering or facilitating, ability of students to take up the responsibility for conducting tutorials, etc. In practice the number of rooms and total time available and the number of teachers (medium of instruction and subjectwise) available are the crucial factors that decide the size of the batch. It must however be noted that tutorial batches should not exceed a manageable number, giving scope to each individual to express freely in the group.

Framing the tutorial time table can be a complex and complicated exercise in a college having a few hundred students studying various subject combinations through different media of instruction. Pattanshetti has described in detail how such an exercise was successfully carried out in his college. He has also suggested procedures for monitor-

ing the presence of students, recording their progress through evaluation profiles, reporting the progress of students to parents and guardians, etc. The tutorial session is meant to conduct a variety of instructional activities, such as improving skills of note taking, writing essays and assignments on topics suggested by teachers or chosen by students, evaluation of students' essays and assignments and appropriate feedback to them and encouraging students to conduct discussion sessions. The author has discussed a variety of strategies to be adopted in conducting tutorials, including sub-grouping, prompting techniques and brainstorming methods. He has also described appropriate procedures for assessment of students in tutorial sessions.

Chapter seven is devoted to a discussion of the teacher's role in conducting tutorials. The teacher's instructional role has been restricted to the students' cognitive development for long; his role needs to be extended to the social and emotional development of students too. The teacher should try to be a facilitator, rather than a mere transmitter of information through traditional lecturing. The tutorial enables the teachers to act as facilitators, encouraging the students to learn through self study and group interaction. To prepare for such a role, the teacher has to continuously update his knowledge, read latest books and journals in his subject and

be interested in and familiar with the problems of his students, both academic and socio-personal. More importantly, he should develop an attitude of sympathy for his students, so that they will feel free to seek his guidance in academic as well as personal matters.

The last chapter mentions some problems in designing and organising tutorials, to which solutions such as orientation of college teachers have been suggested. The academic staff colleges can play a vital role in developing the needed skills in designing and organising tutorials through their orientation and refresher programmes. The students also need to be oriented for participation in tutorials, so that they know what to expect from these small group interactional sessions.

The book is useful in giving certain ideas to college teachers in the basics of tutorials. By its very nature, designing and conducting tutorials is a highly flexible instructional activity, which will differ from college to college and state to state in a large country such as India. Therefore, it would be difficult to suggest a particular model with fine details. Pattanshetti has mainly addressed his book to his colleagues in Karnataka and it is hoped that they will find his many practical suggestions for organising tutorials useful. There is a lot of overlap and repetition of the text in different chapters, which could have been avoided.

UNIVERSITY GRANTS COMMISSION

NOTIFICATION

It is notified that the next UGC Test for Junior Research Fellowship and Eligibility for Lectureship will be held on **20th June, 1993**. The candidates who desire to appear in the Test may see the detailed advertisement in the Employment News dated 27th February, 1993.

Dr. N.K. Jain
Deputy Secretary

davp 823(16)92

CURRENT DOCUMENTATION IN EDUCATION

A list of select articles culled from periodicals received in AIU Library during February 1993

EDUCATIONAL PHILOSOPHY

De Jong, Arthur J. Making sense of Church-related higher education. *New Directions for Hr Edn* 20(3), 1992, 19-27.

Galbraith, John Kenneth. The university: Reflections over the year. *Academe* 78(5), 1992, 10-2.

Iheoma, Eugene O. Philosophy of education needs a theory of education. *New Frontiers in Edn* 22(4), 1992, 575-94.

Shils, Edward. Points of departure. *Minerva* 30(2), 1992, 296-301.

EDUCATIONAL PSYCHOLOGY

Santhana Krishnan, S. Creativity: Path analytical study. *Progress of Edn* 67(6), 1992, 140-2.

Tompkins, Jane. The way we live now. *Change* 24(6), 1992, 12-9.

Vosko, Richard S. Where we learn shapes our learning. *New Directions for Adult & Continuing Edn* 50, (Summer) 1991, 23-32.

EDUCATIONAL SOCIOLOGY

Adiseshiah, Malcolm S. Role of society, particularly the private sector, in university education. *Progressive Ednl Herald* 7(1), 1992, 11-6.

Duffey, Joseph D. What's ahead for higher education: The future isn't what it used to be. *Ednl Record* 73(4), 1992, 7-10.

Joseph, S V. Educational growth among the depressed castes in Kerala: Formulating a hypothesis. *J of Edn & Social Change* 6(1), 1992, 68-77.

Manski, Charles F. Educational choice (Vouchers) and social mobility. *Eco of Edn Rev* 11(4), 1992, 351-69.

EDUCATIONAL PLANNING

Sheckley, Barry G and others. Employability: Today's problems, tomorrow's solutions. *Ednl Record* 73(4), 1992, 27-31.

WOMEN'S STUDIES

Sahasrabudhe, Anuradha. Failure of women's adult education in India: Some socio-cultural constraints and possible remedial measures. *Adult Edn & Devp* 38, 1992, 225-32.

EDUCATIONAL ADMINISTRATION

Adiseshiah, Malcolm S. Centre-State-University-College partnership in education in India. *J of Ednl Plang & Admn* 6(1), 1992, 1-15.

Baxi, Upendra. 'Privatization' of education: A futureless metaphor? *J of Hr Edn* 16(1), 1992, 111-15.

Birbaum, Robert. The latent organizational functions of the academic senate: Why senates do not work but will not go away. *New Directions for Hr Edn* 19(3), 1991, 7-25.

Meyer, J H F and others. Impressions of disadvantage: I-School versus university study orchestration and consequences for academic support. *Hr Edn* 24(3), 1992, 291-316.

TEACHERS & TEACHING

Ramabrahmam, I and Hariharan, Meena. Management of training in higher education: The role of Academic Staff Colleges. *Progressive Ednl Herald* 7(1), 1992, 64-9.

Smith, Ronald A and Cranton, Patricia A. Students' perceptions of teaching skills and overall effectiveness across instructional settings. *Research in Hr Edn* 33(6), 1992, 747-64.

Wilson, Robert N. Academic joys. *Academe* 78(5), 1992, 30-3.

EDUCATIONAL RESEARCH

Seth, Mridula. Research and action: Involvement of academic institutions. *Adult Edn & Devp* 38, 1992, 269-74.

EDUCATIONAL TECHNOLOGY

Albright, Michael J. The future of campus media centers. *New Directions for Teaching & Learning* 51, (Fall) 1992, 91-100.

Ford, Nigel and Ford, Rosalind. Learning strategies in an 'ideal' computer-based learning environment. *British J of Ednl Tech* 23(3), 1992, 195-211.

Hazen, Margret. Academic computing: How to address the teaching and learning challenge. *New Directions for Teaching & Learning* 51, (Fall) 1992, 45-53.

EDUCATIONAL EVALUATION

Cappelli, Peter. College, students and the workplace: Assessing performance to improve the fit. *Change* 24(6), 1992, 55-61.

Doran, Rodney L and Tamir, Pinchas. Results of practical skills testing. *Studies in Ednl Eva* 18(3), 1992, 365-92.

Tamir, Pinchas and others. Procedures used in practical skills testing in science. *Studies in Ednl Eva* 18(3), 1992, 277-90.

ECONOMICS OF EDUCATION

Ahumada, Martin M. U S Methods for costing in higher education: Taking the technology abroad. *Hr Edn* 24(3), 1992, 363-77.

Anandakrishnan, M. Education development bank: A viable alternative to capitation fees. *J of Hr Edn* 16(1), 1992, 126-28.

Bhaskaran Nair, P V. Impact of unemployment factor on the earning profiles of graduates, post-graduates and doctorates. *J of Ednl Plang & Admn* 5(1), 1991, 65-73.

Brown, Byron W. Why governments run schools? *Eco of Edn Rev* 11(4), 1992, 287-300.

SCIENCE EDUCATION

Doran, Rodney L and others. Conditions for teaching laboratory practical skills. *Studies in Ednl Eva* 18(3), 1992, 291-300.

VOCATIONAL EDUCATION

Singh, M P. Professional farmers' correspondence course programme: A unique experiment of an Indian agriversity in adult education. *Adult Edn and Devp* 38, 1992, 141-48.

LIBRARIES & BOOKS

Wegner, Lucy Siefert. The research library and emerging information technology. *New Directions for Teaching & Learning* 51, (Fall) 1992, 83-90.

ADULT EDUCATION

Beatty, Paulette J. Undeniable link: Adult and continuing education and individual change. *New Directions for Adult & Continuing Edn* 54, (Summer) 1992, 17-24.

Beder, Hal. Adult and continuing education should not be market driven. *New Directions for Adult & Continuing Edn* 54, (Summer) 1992, 69-75.

Radhakrishnan, R and Akila, R. India's educational efforts: Rhetoric and reality. *Bulletin Madras Devp Seminar Series* 23(1), 1993, 38-55.

Udagama, Premadasa. World declaration on education for all: Fantasy or vision? *Adult Edn & Devp* 38, 1992, 205-12.

DISTANCE EDUCATION

Baird, Marcia A and Monson, Mavis K. Distance education: Meeting diverse learners' needs in a changing world. *New Directions for Teaching & Learning* 51, (Fall) 1992, 65-76.

Dillon, Connie and Gunawardena, Charlotte. Evaluation research in distance education. *British J of Ednl Tech* 23(3), 1992, 181-94.

THESES OF THE MONTH

A list of Doctoral Theses accepted by Indian Universities

BIOLOGICAL SCIENCES

Anthropology

1. Khanna, Asha. Study of genetic polymorphism of red cells among nine population groups of Jammu and Kashmir, India. Delhi.
2. Malik, Prabha. Familial correlations and heritability of body dimension of adult Punjabi Khatri in Delhi. Delhi.
3. Mandarapu, Ramesh. A genetic study of the Rellis. Andhra.
4. Saklani, Beena. Birth and child rearing practices in Garhwal Himalaya: An anthropological perspective. Garhwal. Dr P C Joshi.
5. Sharma, Nivedita Meera. The study of creases in forensic investigations. H S Gour. Dr A N Sharma, Department of Anthropology, Dr Hari Singh Gour Vishwavidyalaya, Sagar.
6. Swami, Anju. Occupational health hazards in stone quarry workers: Morphophysiological study of Malls of Rajasthan. Delhi.

Environmental Sciences

1. Bhaskara Rao, Cheedella. Studies on pollination ecology of some plant species. Andhra.
2. Kar, Ghanendra Kumar. Limnological studies on Hirakud Dam reservoir and river IB with reference to paper mill waste pollution. Sambalpur. Prof M C Dash, Post Graduate Department of Life Sciences, Sambalpur University, Jyoti Vihar.
3. Poonam Kumar. Influence of environment, biodegradation and cytological studies of some vegetables in and around the market of Patna. Magadh.
4. Rajalakshmi Amma, P. Studies on the toxic effects of selected heavy metals in the freshwater mussel, *Lamellidens corrianus* LEA. CUST. Dr A Mohandas, Head, School of Environmental Studies, Cochin University of Science and Technology, Kochi.
5. Singh, Mridula. Studies on biological treatment of industrial waste water. Durgawati. Dr S K Hasija, Prof and Head, Department of Biosciences, Rani Durgawati Vishwavidyalaya, Jabalpur.
6. Tyagi, Rakesh Kumar. Studies on translocation of L-alanine: 4,5-dioxovalerate transaminase from cytosol to mitochondria. JNU.

Marine Sciences

1. Bulusu, Venkata Sreeramachandra Murthy. Taxonomic and electrophoretic studies on three genera of penaeoid prawns of the East Coast of India and some aspects of the biology of *Metapenaeopsis barbata* De Haan 1844 from Visakhapatnam. Andhra.
2. Geetha, T S. Effects of binary mixtures of metals on an estuarine clam: Assessment and kinetics. CUST. Dr Jacob Chacko, Reader, School of Marine Sciences, Cochin University of Science and Technology, Kochi.

3. Paul, M. Trace metal speciation in the Cochin estuary. CUST. Dr Jacob Chacko, Head, Chemical Oceanography Division, School of Marine Sciences, Cochin University of Science and Technology, Kochi.

4. Sujatha, C.H. Dynamics of some environmentally significant pesticides in a tropical waterway: A toxicological approach. CUST. Dr Jacob Chacko, Reader, School of Marine Sciences, Cochin University of Science and Technology, Kochi.

5. Supriya, R. Studies on the survival of *Sunetta scripta* in different salinities. CUST. Dr R Damodaran, Prof, School of Marine Sciences, Cochin University of Science and Technology, Kochi.

6. Vasudevan Nayar, T. Biogeoorganics in the sedimentary environments of Cochin Estuary. CUST. Dr Chandramohana Kumar, Lecturer, School of Marine Sciences, Cochin University of Science and Technology, Kochi.

Biophysics

1. Bagga, Rajesh. Unusual DNA structures and transcription control. IISc.

Biochemistry

1. Aryan Namboodiri, M S. Anti-DNA antibodies in systematic lupus erythematosus and their induction in mice. IISc.

2. Bhaduri, Saswata. Analysis of guanosine-3': 5'-cyclic monophosphate induced derepression of sporulation under condition of glutamine repression in *Bacillus subtilis* B34. Calcutta.

3. Bhat, Manoj Kumar. Studies on the toxic phospholipases from the Indian cobra, *Naja naja* naja venom and their detoxification by active plant components. Mysore.

4. Dasgupta, Jaydip. Studies on genomic DNA of some Brassica species with special reference to repetitive DNA. Calcutta.

5. Devi Prasad, P. Studies on riboflavin carrier protein: Isolation and hormonal modulation of its biosynthesis in the mammary gland and characteristics of its placental receptor. IISc.

6. Kanuri, Manorama. Studies on red palm oil, *Elaeis guineensis* nutrition - bio-chemical and toxicological aspects. Osmania.

7. Karnik, Arti. Study of immunodeficiencies. Devi Ahilya. Dr R Vijayvarghiya, T Chuithram Hospital and Research Centre, Indore.

8. Koratkar, Revati. A study of the antimutagenic actions of prostacyclin and its mechanisms. Osmania.

9. Umesh Kumar. Role of *Saccharomyces cerevisiae* in manipulating rumen metabolism in buffaloes. PAU.

10. Patel, Manu Bhai. Plant tissue culture studies in some members of family Leguminosae and Brassicaceae. Devi Ahilya. Dr R Bhardwaj, Department of Biochemistry, Devi Ahilya Vishwavidyalaya, Indore.

11. Salomi, M J. Anticancer activity of medicinal plants. Calicut. Dr K R Panikkar Awasthy, T C 3/1996, Sivamangalam Lane, P O Pattom Palace, Trivandrum.

12. Upadhyay, Poornima. Identification of a positive Cis-acting DNA element and transacting factor(s) regulating CYP2B/B2 gene transcription in rat liver. IISc.

13. Venkateswara Rao, M. Identification of a negative Cis-acting DNA element regulating transcription of CYP2B1/B2 gene in rat liver. IISc.

14. Zulfiqar Ahmad. Structural and thermodynamic studies of partially denatured states of cytochrome - C. Jamia. Dr Faizan Ahmad, Department of Chemistry, Jamia Millia Islamia, New Delhi. Biotechnology

1. Joseph, Gerald Theodore. Cloning, expression and evaluation of the diagnostic antigens of bancroftian filariasis. Anna.

2. Venkatesh Gopal, K. Cloning and characterisation of the antigen(s) of an avian adenovirus: The egg drop syndrome virus (EDS 76). Anna.

Microbiology

1. Dev Mitter. Characterization of antigens/allergens of *Pleurotus* spp. PAU.

2. Jasjit Kaur. Physiological aspects of nisin production in immobilized *Streptococcus lactis*. PAU.

3. Kapoor, Shammi. Biochemical studies on phospholipase A1 and phospholipase A2 of *Salmonella* Sp and their role in pathogenicity. PAU.

4. Niranjana Kumari, S. DNA polymerases of the silkworm, *Bombyx mori*. IISc.

5. Patel, Sangeetaben Shashikant. Some studies on biophysical characterization of *Halobacterium halobium* and its exploitation towards photohydrogen production along with cyanobacteria. Patel. Dr Datta Madamwar.

Botany

1. Ajit Kumar, K G. Physiological studies on soybean, *Glycine max* (L) Merr with reference to its cultivation in Kerala. Calicut. Dr N Neelakandan, Department of Botany, University of Calicut, Calicut.

2. Ambawatia, Ghasiram. To study the drought resistance of some wheat genotypes in relation to their seed germination and plant characteristics. H S Gour. Dr T R Sahu, Department of Botany, Dr Hari Singh Gour Vishwavidyalaya, Sagar and Dr D C Garg, Govt N M V College, Hoshangabad.

3. Ambrish. Effect of supplemental ultraviolet-B radiation on growth and composition of certain legume crops. Garhwal. Dr V K Jain.

4. Anees Khanam. In vitro studies in *Josoba*, *Simmondsia chinensis* (Link) Schneider. Osmania.

5. Appa Rao, S. Limnological studies in certain ponds in the vicinity of Hyderabad with reference to eutrophication. Osmania.

6. Chattopadhyay, Sitalprasad. Angiospermic flora of Hazaribagh District, Bihar. Calcutta.

7. Grace, Jangam Ratna. Sister chromatid exchanges in onion and pearl millet. Andhra

8. Gupta, Pushp Kali. A taxonomic survey of the algal flora of Leh, Ladakh. Jammu. Dr Shashi Kant, Prof, Department of Botany, University of Jammu, Jammu.

9. Hardip Singh. Epidemiology and control of stem rot of Egyptian clover caused by *Sclerotinia trifoliorum* Erikss. PAU.

10. Jain, Chitra. Studies on antifungal activity of some higher plants. H S Gour. Dr N K Soni, Department of Botany, Dr Hari Singh Gour Vishwavidyalaya, Sagar.

11. Jain, Kiran. Mycotoxin contamination in food and feed with special reference to their cytogenetic effects on plant system. H S Gour. Prof S C Agrawal and Dr S K Yadav, Department of Botany, Dr Hari Singh Gour Vishwavidyalaya, Sagar.

12. Jain, Nivedita. Use of enzyme assay to assess fungal contamination in wheat grains. H S Gour. Dr P C Jain, Department of Botany, Dr Hari Singh Gour Vishwavidyalaya, Sagar.

13. Jain, Pratibha. An ethnobotanical pharmacognostical and antimicrobial screening of plants of Noradehi Sanctuary Park. H S Gour. Dr T R Sahu, Department of Botany, Dr Hari Singh Gour Vishwavidyalaya, Sagar.

14. Kusum Lata. Regeneration potential photosynthetic biomass and nutrient cycling of a moist temperate forest in Garhwal Himalaya. Garhwal.

15. Lalitha, C R. Studies on the biology and taxonomy of the genus *Auriculoscypha*. Calicut. Dr K M Leelavathy, Department of Botany, University of Calicut, Calicut.

16. Mandal, Mausumi. Studies on in vitro culture of shoot bud of *Carica papaya* Linn *Caricaceae* var Honey Dew. Calcutta.

17. Mishra, Manish. Reproductive biology and propagation of some forest plants. H S Gour. Dr A K Kandaya, Department of Botany, Dr Hari Singh Gour Vishwavidyalaya, Sagar.

18. Munshi, Anjana. Cytogenetic studies on aneuploids of *Plantago lanceolata* L. Jammu. Dr Anima Langer, Lecturer, Department of Botany, University of Jammu, Jammu.

19. Narender Rao, V. Limnological studies in three fresh water ponds of Hyderabad, India. Osmania.

20. Odak, Akshaya S. Microbial deterioration of stored feed and their potential hazards to animals. Jiwaji. Dr R K S Chauhan, Department of Botany, Jiwaji University, Gwalior.

21. Palit, Syamasri. Studies on cytotoxicity of cobalt in eukaryotic test systems. Calcutta.

22. Patel, Dilipbhai Bhagwanbhai. In vitro approaches to develop wilt resistance in *Cajanus cajan* (L) Millsp. Baroda.

23. Pawar, Kuver Singh. Phenotypic stability of yield and yield components of desi cotton, *G. arboreum*. Barkatullah.

24. Purohit, Mamta. Studies on seed testing of some tropical forest tree species. H S Gour. Prof G P Mishra, Department of Botany, Dr Hari Singh Gour Vishwavidyalaya, Sagar and Dr Jamaluddin.

25. Raha, Pratibha. Genetical and cytological behaviour of hexaploid triticale and hexaploid wheat crosses under irrigated and

rainfed conditions. Durgawati. Dr G P Agrawal, Prof and Head (Retd), Department of Biosciences, Rani Durgawati University, Jabalpur and Dr C B Singh, Prof and Head, Department of Plant Breeding and Genetics, Jawaharlal Nehru Krishi Vishwavidyalaya, Jabalpur.

26. Raj Kumari. Studies on algae of cultivated fields. Osmania.

27. Rajput, Anjana. Seed biology of some selected tree species of Central India. H S Gour. Prof G P Mishra, Department of Botany, Dr Hari Singh Gour Vishwavidyalaya, Sagar.

28. Saket Vihari. Ecological study of *Helianthus annuus* L from Bihar Sharif, Bihar. Magadh.

29. Saklani, Arvind. Cross cultural ethnobotanical studies among the tribes of North Eastern India. Garhwal. Dr S K Jain.

30. Sarvepalli, Badri Narayan. In vivo and in vitro studies on neurotoxin in *Lathyrus sativus* L. Baroda.

31. Singh, Anop. Eco-physiology of *Podophylla hexandrum* hexandrum Royle. Garhwal. Dr A N Purohit.

32. Singh, Sunita. Ecological studies on natural vegetation around thermal power plant with special reference to the impact of fly ash and afforestation prospects in ash dumps. H S Gour. Prof S C Agarwal, Department of Botany, Dr Hari Singh Gour Vishwavidyalaya, Sagar.

33. Tiwari, Shailendra Kumar. In vitro propagation of medicinally important forest plants of Madhya Pradesh. Durgawati. Dr S K Hasija, Prof and Head, Department of Biosciences, Rani Durgawati Vishwavidyalaya, Jabalpur and Dr Ram Prasad, Director, State Forest Research Institute, Jabalpur.

34. Urmila Srawan. Reproductive biological studies of forest tree seeds. H S Gour. Prof G P Mishra, Department of Botany, Dr Hari Singh Gour Vishwavidyalaya, Sagar.

35. Vaid, Neelam. Effect of growth regulators on metabolism and yield components in some oleiferous Brassica spp.. PAU.

Agriculture

1. Dighya, Jayant Kumar Manohar. Pattern of nutrient uptake in wheat varieties under Malwa Plateau. Devi Ahilya. Dr Y M Upadhyaya, 68, Prakash Nagar, Indore.

2. Gairola, Vandana. Pigment and protein profile of *Eugenia* leaves under sun and shade and heat shocks. Garhwal. Dr A N Purohit.

3. Gurnam Singh. Physiological effects of insecticides on reproduction of mustard of aphid, *Lipaphis erysimi* (Kaltenbach). PAU.

4. Murali, K S. Vegetative and reproductive phenology of a tropical dry deciduous forest, Southern India. IISc.

5. Patil, Shankargouda. Study on the utilization of some waste materials of forests for wood-cement composites and pulping. Y S Parmar. Dr A N Kaushal.

6. Sanjiv Kumar. Studies on stem rot of chickpea. PAU.

7. Sharma, Vishwa Mitter. Effect of maize based intercropping on nitrogen economy in wheat. HP Krishi. Dr I S Chakor.

8. Singh, Narender. Potassium nutrition of apple. Y S Parmar. Dr R P Awasthi, Prof and Head, Department of Fruit Culture and Orchard Management, Dr Yashwant Singh Parmar University of Horticulture and Forestry, Nauni, Solan.

Zoology

1. Arya, Rashmi. Studies on the corpora atretica post-ovulatory follicles and cytoarchitectural relationship between the pituitary and growing oocytes of *Basilus bola* Hamilton. Garhwal. Dr R M Saxena.

2. Bhandari, Sugandha. An analytical study of antigens producing contact dermatitis with special reference to trace elements and enzyme superoxide dismutase. Devi Ahilya. Dr N C Sethi, 583, M G Road, Manik Bhawan, Turkaganj, Indore.

3. Bhatia, Sanjay. Studies on the insect pests of Poplars in Jammu forests of Jammu and Kashmir State. Jammu. Dr Baldev Sharma, Reader, Department of Zoology, University of Jammu Jammu.

4. Chatterji, Anuradha. Measurements of the force-velocity relationship of frog skeletal muscle. Jamia. Prof M Amin, Department of Biosciences, Jamia Millia Islamia, New Delhi.

5. Chaurasia, Prabha. Changes induced by chemosterilants in some insect pest tissues. H S Gour. Dr (Miss) Smita Banerjee, Department of Zoology, Dr Hari Singh Gour Vishwavidyalaya, Sagar.

6. Choudhary, Seema. Effect of pesticides on the blood of the albino rat. H S Gour. Dr (Mrs) S Sahai, Department of Zoology, Dr Hari Singh Gour Vishwavidyalaya, Sagar.

7. Dixit, Om Prakash. Study on the effect of selected plant bioproducts on some pulse beetles. Barkatullah.

8. Dubey, Abha. Studies on biology of monogenean trematodes and their parasitic effects on fresh water at Raipur. Ravishankar. Dr A K Gupta, Lecturer, School of Studies in Biosciences, Pt. Ravishankar Shukla University, Raipur.

9. Dwivedi, Sanjay. A comparative cytoarchitectural study of reptilian hypothalamas including development, neuronal tracing and immunocytochemistry in *Calotes versicolor* Dau. Nagpur. Prof P D Prasad Rao, Department of Zoology, Nagpur University, Nagpur.

10. Gupta, Arun Kumar. Feeding biology and some aspects of ecology of fishes inhabiting Lake Mansar, Jammu. Jammu. Dr Y R Malhotra, Prof, Department of Zoology, University of Jammu, Jammu.

11. Ishrat Alim. Bacteriological and heavy metal valuation of waste stabilization ponds for carp culture. Barkatullah.

12. Kaushik, Shailendra. Ecological studies of some waterbodies at Gwalior, Madhya Pradesh. Jiwaji. Dr D N Saxena, Reader, Department of Zoology, Jiwaji University, Gwalior and Dr M N Saxena, Principal (Retd), School of Studies in Zoology, Jiwaji University, Gwalior.

13. Kushwah, Kusum. Toxicological effects of *Neem*, *Azadirachta indica* (A) Juss oil on albino rats. Jiwaji. Dr A O Prakash, Department of Zoology, Jiwaji University, Gwalior.

14. Mahulia, Man Mohan. Insecticide resistance in mosquitos of Bhopal District, with reference to bionomics, taxonomy, biology and periodicity. Barkatullah.

15. Mishra, Om Prakash R. Effect of mulching and antitranspirants on yield and yield contributing characters of rainfed wheats. Devi Ahilya. Dr Y M Upadhyaya, 68, Prakash Nagar, Indore.

16. Mookerji, Nandita. Comparative experimental studies on the feeding ecology of the larvae of rohu, Labeo rohita and singhi, Heteropneustes fossilis. Delhi.

17. Pandoh, Baldev Raj. Ecological studies on trematodes of some aquatic vertebrates of Jammu province. Jammu. Dr P L Duda, Prof, Department of Zoology, University of Jammu, Jammu.

18. Pant, Kanchan. Relative roles of thyroid hormones in vertebrate physiology. Garhwal.

19. Patil, Sunita Madhukar. Multifunctional role of vertebrate epidermis with reference to the barrier properties under varied conditions. Baroda.

20. Paul, Palle Luther. Development of certain endocrine glands and gonads in the common carp, *Cyprinus carpio* Linn. Nagpur.

21. Prabhakara Rao, P. In vivo effects of anthelmintic drug on certain aspects of metabolism in cestode parasite of *Streptopelia chinensis suratensis* Gmelin 1789. Osmania.

22. Prasad, Yogendra. Studies on bacterial fish diseases, their prophylactic and therapeutic measures. Barkatullah.

23. Purvarkar, Ravi Shankar. Neuroanatomical studies of male genital organs of *Funambulus* species. Devi Ahilya. Dr R S Purvar, Department of Zoology, Holkar Science College, Indore.

24. Qureshi, Majid Mohammed. Evaluation of physico-chemical factors of oxidation ponds of Bhopal. Barkatullah.

25. Sabnakar, Praveena. Genetic studies on pardhi population of Andhra Pradesh. Osmania.

26. Salikineedy, Kishore. Studies on monogenetic trematodes of Visakhapatnam. Andhra.

27. Sarat Chandran, K. Interaction of some pesticides with rhizobia growth and *Rhizobium leguminosarum* - *Pisum sativum* (Garden pea) symbiosis. Delhi.

28. Sen, Kalpana. Studies on free-living amoebae isolated from sewage of Calcutta. Calcutta.

29. Shah, Pinky. Individual and cumulative studies on the toxic effects of pesticide, fertilizer and heavy metal on the intestine of *Glossogobius giuris* Ham. Barkatullah.

30. Sharma, Anju. Induced ovarian maturation in fingerlings of *Channa punctatus* Bloch and *cyprinus*, *Carpio communis* Linnaeus and advancement of spawning in some adult fishes of Jammu. Jammu. Dr Y R Malhotra, Prof, Department of Zoology, University of Jammu, Jammu and Dr Kadambri Gupta, Lecturer, Department of Zoology, University of Jammu, Jammu.

31. Sharma, Meenakshi. Hydrobiological studies of Halali reservoir with reference to zooplankton and fishery prospects. Barkatullah.

32. Singh, Birendra. Ecological studies on phthirapteran ectoparasites infesting certain domestic mammals of Dehradun District. Garhwal.

33. Singh, Mahavir. Limnological studies on a higher altitude lake Deoria Tal of Garhwal, Himalaya. Garhwal. Dr P C Sharma

34. Thiayagesan, K. Ecology of cavity nesting birds in and around Mayiladuthurai, Tamil Nadu, South India. Bharathidasan. Dr M C Sathyanarayana, Division of Wildlife Biology, A V C College, Mannampandal, Mayiladuthurai.

35. Tripathi, L K. Studies on morphology and pathogenic significance of trematode parasites of some hill stream fishes of Garhwal. Garhwal. Dr R K Jauhar.

36. Upmannu, Reeta. Changes in serum protein contents, aminoacids and cholesterol of brain, liver and kidney under the influences of pesticides in fishes. H S Gour. Dr D K Saraf, Department of Zoology, Dr Hari Singh Gour Vishwavidyalaya, Sagar.

37. Zutshi, Neeta. Effect of Jammu City sewage water on abiotic and biotic factors of the river Tavi, Jammu. Jammu. Dr SPS Dutta.

Medical Sciences

1. Bhashni, Madhur. Immunologic studies related to diagnosis and immune status of children suffering from tuberculosis. PGI.

2. Malladi, Chandra Sekhar. Studies on viral related proteins. Delhi.

3. Pal, Shanthi N. Mechanism of antidepressant drugs: Some biochemical and behavioural correlates. Jamia Hamdard. Prof P C Dandiya.

4. Radhika, G. Primary glaucoma: A study on its genetic, biochemical and immunological aspects. Osmania.

6. Radhika, S. Early development and psychoaffective predictors of cerebral palsy in high risk infants. PGI.

7. Seeta, P. Induction and isolation of somaclonal variants in safflower, *Carthamus tinctorius* L. Osmania.

8. Sharma, Kiran. Pharmacological effect of autonomic drugs on isolated melanophores of *Cirrhinus mrigala* and *Ophiocephalus cachus*. Barkatullah.

9. Singhai, Abhay Kumar. Investigation on some antifertility drugs of plant origin. H S Gour. Prof V K Dixit, Head, Department of Pharmaceutical Sciences, Dr Hari Singh Gour Vishwavidyalaya, Sagar.

10. Surya Kumar, J. Pharmacokinetic interaction studies on some non steroidal antiinflammatory drugs (NSAIDS). Kakatiya.

11. Thassu, Deepak Kumar. Formulation and evaluation of transdermal drug delivery systems using pro-drug concept. H S Gour. Dr SP Vyas, Department of Pharmaceutical Sciences, Dr Hari Singh Gour Vishwavidyalaya, Sagar.

Animal Husbandry

1. Kashmira Singh. Studies on the effect of maturity and level of nutrition on the carcass characteristics and meat quality of male buffalo calves. PAU.

CLASSIFIED ADVERTISEMENTS

KURUKSHETRA UNIVERSITY, KURUKSHETRA

(Adv. No. 2/93)

Applications on the prescribed form are invited for the following posts :-

UNIVERSITY TEACHING DEPARTMENTS

1. Reader (Grade: Rs. 3700-125-4950-150-5700) (UGC)

- i) **Electronic Science** (1)
Specialization :
Optoelectronics and Optical Communication/Communication Electronics/ Device Modelling and Circuit simulation.

- ii) **Public Administration** (1)
Specialization :
Development Administration/Social Administration/Local Government.

- iii) **Music** (1)
Specialization :
Music (Vocal)

2. Lecturer (Grade : Rs. 2200-75-2800-100-4000) (UGC)

- i) **History** (1)
Specialization :
Medieval Indian History (Desirable : Knowledge of Persian).

- ii) **Economics** (1)
Reserved for Scheduled Caste candidate.

- iii) **Psychology** (1)
Reserved for Scheduled Caste candidate.

- iv) **Geology** (1)
Specialization :
Structural Geology/Petrology/Economic Geology/Palaeontology and Stratigraphy/Exploration and Mining Geology/Environmental Geology/Engineering Geology.

- v) **Geology** (1)
Reserved for Scheduled Caste candidate.

3. UNIVERSITY COLLEGE, KURUKSHETRA

Lecturer (Grade : Rs. 2200-75-2800-100-4000) (UGC)

- i) **English (Temporary)** (1)

- ii) **English** (1)

Reserved for Scheduled Caste candidate.

- iii) **Psychology** (1)

Reserved for Scheduled Caste candidate.

- iv) **Electronics** (1)

- v) **Commerce** (1)

Reserved for Scheduled Caste candidate.

- vi) **Music (Vocal)** (1)

(Leave Vacancy)

- vii) **Physical Education** (1)

(Leave Vacancy)

4. University College of Education

Principal : Gr.

- i) Rs. 3700-125-4950-150-5700 (UGC)

- ii) Rs. 4500-150-5700-200-7300 (UGC)

(For those who fulfil the conditions laid down by the Haryana Govt.).

QUALIFICATIONS :

- a) A consistently good academic record with high Second Class (55% marks or grade B in seven point scale) M.A. Education with B.Ed. (Second class with 50% marks in Theory and practice separately) or Master's degree in any subject with M.Ed. (55% marks in one Degree and 50% marks in the other). (The condition of 55% marks in M.A Education or Master's Degree in any other subject is relaxable down to 50% marks in the case of a teacher appointed in a University Teaching Department or in a College recognised by the University prior to 27.1.76 provided that such appointment in a College recognised by the University has been approved by the University.)

- b) An M.Phil degree or a recognised degree beyond the Master's level or published work indicating the capacity of a candidate for independent research work.

- c) Provided that if a candidate possessing the qualifications as at (b) is not available or not considered suitable, the University on the recommendations of the Selection Committee may appoint a person possessing the qualifications as at (a).

- d) Teaching experience of at least 10 years in a recognised College or University Teaching Department out of which teaching experience of atleast 5 years should be in a recognised College of Education or the Department of Education of a University.

- e) Persons with some administrative experience including financial accounting in an educational institution will be preferred.

5. Programmer (For Computer Centre)

- (1) Grade : Rs. 700-40-1100-50-1300
(Unrevised - likely to be revised)

Qualifications :

- i) M.Tech (Computers) or M.C.A. with a minimum of 55% or 6.15 points in the 9 point scale (3 years Degree)

OR

M.C.A. (2 years Degree Course) with 60% at 6.7 points in the 9 point scale (First Division).

- ii) Minimum experience of three years in programming & data base management systems on any standard Makes of Super-Mini or Main Frame Computers with a good knowledge of integral operating systems. Should have a good knowledge of UNIX operating systems, C Language and any one Computer Language out of COBOL, FORTRAN 77 & PASCAL. Must have a good knowledge and practical experience in handling PCXT and PCAT and MSDOS.

6. Sub-Divisional Officer (1)

Grade : Rs. 2200-75-2800-100-4000
(on Haryana Govt. pattern)

Qualifications

B.E. (Civil with 2 years' experience, relaxable for internal candidates; S.O./J.E. with 8 years' experience.

7. Landscape Officer (1)

Grade : Rs. 2200-75-2800-100-4000

Qualifications :

- B.Sc. (Agriculture) with Horticulture/Landscape as Major subject. M.Sc. (Agriculture) Landscape preferred.
- Minimum five years' experience in a field of landscape, Arboriculture and Nursery production.

8. Research Officer (1) (For Women's Studies Research Centre)

Grade : Rs. 2200-75-2800-100-4000

Qualifications :

- A Doctorate Degree or Research work of an equally high standard in Social Sciences/Sciences/Education/Humanities.
- Good Academic record with atleast second class (C in the seven point scale) Master's degree in Social Sciences/Sciences/Education/Humanities from an Indian University.

Desirable :

The candidate should have research work in the area of Women's Studies.

9. Technical Lab. Assistant (1) (For Dept. of Special Assistance)

Grade : Rs. 950-20-1150-EB-25-1500

Qualifications :

Matric with Science Ist Class

OR

Matric with Science Second Class with three years' experience in the line.

10. Librarian in the Institute of Sanskrit & Indological Studies (1)

Grade : Rs. 1600-50-2300-EB-60-2660)

Qualifications :

- M.A. Sanskrit 2nd Division (55%)
- M.Lib. Science good 2nd Division (55%)

iii) Three years experience as Professional Assistant OR

- M.A. Sanskrit good 2nd Division (55%)
- Diploma/B.Lib. Science 2nd Division (55%)
- Five years experience as Professional Assistant.

Desirable :

Knowledge of some other classical Indian Languages.

Only candidates who meet the qualifications laid down in the booklet attached with the application form and in the advertisement will be called for interview for the teaching posts. Specialization for the post of Reader/Lecturer does not mean merely passing a Compulsory or option subject in the specified specialization in M.A./M.Sc. Examinations.

For Reserved posts only candidates belonging to reserved categories should apply.

The applications already received for the post of S.D.O. (Civil) vide Advt. No. 1/92; Research Officer vide Advt. No.3/89 and 1/91; Lecturer in English vide Advt. No. 1/91; Lecturer in Psychology vide Advt. No. 1/91; Lecturer in Geology vide Advt. No. 2/92; and Lecturer in English (Reserved for Scheduled Caste candidates) vide advt. No. 6/91; for University College have been cancelled and they are required to apply afresh but no application fee is required to be paid by them again.

The prescribed application form for both the teaching and non-teaching posts can be had from the Manager, Printing & Publications, Kurukshetra University, Kurukshetra on payment of Rs. 15/- for Sr. Nos. 1 to 3 and Rs. 10/- for Sr. Nos. 4 to 10 on the counter or by making a written request accompanied by self-addressed envelope (23x10 cms) duly stamped for Rs. 8/- each for teaching and non-teaching posts alongwith the Bank Draft of Rs. 15/- (teaching posts) and Rs. 10/- (non-teaching posts) respectively drawn in favour of the Registrar, Kurukshetra University, Kurukshetra and payable at the State Bank of India, University Campus, Kurukshetra.

Applications on prescribed form (alongwith its eight zexed copies) complete in all respects (through proper channel for those in employment) should reach the Assistant Registrar (Estt.) of this University by 26-3-93 alongwith bank Draft of Rs. 30/- for

teaching posts and Rs. 15/- for non-teaching posts as application fee, drawn in favour of the Registrar, Kurukshetra University, Kurukshetra or the amount can be deposited with the Cashier of this University and original receipt be enclosed with application form. SC/ST/BC & Ex-Servicemen are exempted from the application fee.

The applications not in the prescribed proforma or incomplete applications not supported with required application fee, attested copies of the certificates or application received after the last date will be liable to be rejected.

REGISTRAR

WANTED FOR THE COCHIN COLLEGE, COCHIN - 2

- Lecturer in Hindi (Leave Vacancy)
- Lecturer in History (Leave Vacancy)
- Lecturer in Economics (Leave Vacancy)
- Lecturer in Physical Education (Permanent Vacancy)
- Librarian IV Grade (Permanent Vacancy)

All vacancies are on open merit. Age and Qualification as per University/Government rules. Apply within a month of the date of this notification. Application forms can be had from the Principal, Cochin College Cochin - 2 on payment of Rs. 30/- (Rupees Thirty only) Rs. 31/- if by M.O.

Those who applied for the post of Librarian IV Grade earlier (in June 1991) need not apply again.

President,
The Cochin Education Society,
Cochin - 2.

WANTED

Lecturers in the following subjects both in Community (Syrian Catholic) and Open merit against retirement vacancies.

- Economics
- Political Science
- Physics
- Physical Education (Male only)

All vacancies are subject to the approval of the Mahatma Gandhi University. Age and Qualification as prescribed by the University/Govt. of Kerala. Application form can be had from the College Office on payment of Rs. 50/- if by post Rs. 60/-. Apply within one month from the date of this Notification. Candidates applied earlier in response to our advertisement dated 28-4-92 need not apply again.

Thrissur 18-2-1993

Principal
Bharata Mata College,
B.M.C. - P.O.,
Thrissur,
Kochi - 682021.

Institute for Social Sciences and Research

"Greenwoods", Vellore-632 006.

Applications are invited from action-oriented dynamic Indian nationals possessing Post-doctoral experience in Management/Social Work or in any one of the Social Sciences for the posts of Lecturer, Sr. Lecturer and Reader.

Age: 30 to 45; Age relaxation can be given to exceptional cases.

Salary: Salary is not a constraint for the right persons.

Job: Post-graduate teaching, Post-graduate Research Guidance, Design Project proposals etc.,

Apply before 31.03.1993 to the Director, ISSR, Vellore-632006.

REGISTRAR

OFFICE OF THE REGISTRAR : DIBRUGARH UNIVERSITY : DIBRUGARH

ADVERTISEMENT NO. 1/93

Applications are invited for the following Posts :-

1. Reader in Assamese (one) :

Specialisation required : Group "B" (Language)

2. Lecturer in English (one) :

Specialisation required : CIEFL (Hyderabad) Diploma in English language or a qualification equivalent to it. A candidate with specialisation in Phonetics of English or Discourse Analysis will be preferred.

3. Librarian (One) :

(a) First or Second class M.Lib. Science.

Or

MA/M.Sc/M.Com. plus First or Second class B.Lib. Science or Diploma in Lib. Science.

(b) At least 10 years experience as Librarian or in a responsible professional capacity in a University Library.

(c) Ph.D. Degree or equivalent research work in the field relevant to the profession.

(d) In certain situations in academic Libraries, training in Computerisation/information/technology/Specialised areas may be taken into consideration.

4. Statistician (one) :

(a) At least Second class Master's Degree in Statistics with a good academic career

Or

(b) A graduate with Mathematics and Statistics as a combination in degree level with a minimum of 5 years experience of working in statistical matter in an educational institution/Govt. organisations.

5. Mechanic (Electronic) (one) :

Required HSLC/HSSLC pass with diploma in Mechanic (Electronic) in both cases.

6. Glass Blower (one) :

HSLC pass with 10 years of experience.

7. Football Coach :

8. Table Tennis Coach (one each)

(A) The candidate must have represented the state/University in the national level and possess Diploma in coaching from an Institution recognised by the Ministry of Education and Human Resource Development, Govt. of India.

(B) Must be a graduate from a recognised University.

(C) Experienced in Coaching, Organising Tournaments at State level/District level is desirable.

9. Photographer-cum-Cartographer (one) :

a) Degree in Arts/Science/Commerce.

b) Diploma in Photography/Cartography, qualification may be relaxed in case of specially deserving candidates having 10 years experience in the field of photography/Cartography.

10. Senior Accounts Assistant (one) :

Graduate from a recognised University/Board preferably in commerce and must have 5 (five) years experience in Accounts, compilation works in a University or in any other Educational Institution or Govt./Semi Govt. organisation.

Age limit :

Not less than 18 years and not more than 36 years of age on 1st January, 1993.

Educational Qualification and other conditions for teaching posts :

1) Reader :

A) First class Masters degree in Assamese with a good Academic Career with a doctorate degree or equivalent published work. Evidence of being actively engaged in (i) Research (ii) Innovation in Teaching Materials.

B) At least five years experience of teaching and/or research provided that at least three years experience as lecturer or its equivalent position.

2) Lecturer :

A) A doctorate degree or research work of an equally high standard.

B) Consistently good academic record with 1st class or high 2nd class (in the seven point scale) Masters Degree in a relevant subject from an Indian University or an equivalent degree from a foreign University. Having regard to the need for developing interdisciplinary programmes, the degree in (a) and (b) above may be in relevant subjects. Provided that if the Selection Committee is of the view that the research work of a candidate as evident either from his thesis or from his published work is of very high standard, it may relax any of the qualifications prescribed in (b) above for the post of lecturer.

Provided further that if a candidate having a doctorate degree or equivalent research work is not available or is not considered suitable, a person possessing consistently a good academic record (weightage being given to M.Phil or equivalent degree or research work of quality) may be appointed provided he/she has done research work for atleast two years or has practical experience in a Laboratory/Organisation on the condition that he will have to obtain a Doctor's degree or give evidence of research work of equivalent high standard within eight years of his/her appointment as Lecturer failing which he/she will not be able to earn future increment until he fulfils these requirements.

Provided further that if a candidate has first class career (60% or above marks) all through from Matriculation upto the Master degree level, such a candidate can be duly considered by the Selection Committee for appointment as Lecturer by relaxing the qualification for research experience/degree.

9 (nine) copies of applications for teaching Post and 6 (six) copies of applications for other posts on plain papers giving full bio-data including (1) Name in full (In Block Letters), (2) Father's name, (3) Date of Birth, (4) (a) Permanent address, (b) Present address, (5) Present Occupation, if any, (6) Present salary drawn if any and salary expected (7) Academic career in detail from Matriculation upwards showing division/class, aggregate percentage of marks, School/College/University from which appeared, (Attested copies of marksheets, certificates should be enclosed) (8) Details of appointment held with designations, duration and nature of works and name of employers, (9) Research contributions with copies of reprints or research experiences supported by documentary evidence, (10) Name and address of 2 (Two) referees not related to the candidate together with an application fee of Rs. 10/- (Rupees Ten) and Rs. 5/- (Rupees five) for ST/SC candidates only by crossed I.P.O. drawn in favour of the Registrar, Dibrugarh University, Dibrugarh should reach the undersigned on or before 24-3-93.

The number of this advertisement and name of the post applied for must be referred to in the application. Persons who are already in employment should apply through proper channel or with a "NO OBJECTION CERTIFICATE" from the present employer.

All prints of research papers published must be attached in case of teaching posts.

Scale of pay :

1) Reader - Rs. 3700-125-4950-150-5700/- P.M.

2) Lecturer - Rs. 2200-75-2800-100-4000/- P.M.
 3) Librarian - Rs. 3825-125-4450-150-5200-175-5900/- P.M.
 4) Statistician - Rs. 1785-50-2035-60-2095-EB-60-2395-80-2475-EB-80-2875-100-3575-125-4200/- P.M.
 5) Mechanic (Electronic) - Rs. 1985-50-2035-60-2335-EB-60-2395-80-2795-EB-80-2875-100-3575-127-3950/- P.M.
 6) Coaches - Rs. 1685-60-1985-EB-50-2035-60-2335-EB-60-2395-80-2875-100-3575-125-3700/- P.M.
 7) Sr. Accounts Asstt. - Rs. 1475-40-1635-50-1735-EB-50-2035-EB-60-2395-80-2875-100-3575/- P.M.

8) Glass Blower - Rs. 1375-30-1435-40-1595-EB-40-1635-60-1885-EB-50-2035-60-2395-80-2875-100-3375/- P.M.

9) Photographer-cum-Cartographer -do-

All posts carry usual allowances as admissible under the University rules in force from time to time and the incumbents will be eligible for contributory Provident Fund and Gratuity on confirmation as per rules of the University.

Applications not in conformity with the above requirement will not be entertained.

Applications reached after the closing date will be rejected.

Candidates will be required to appear before an interview if and when called for.

No TA/DA is admissible for this purpose.

MAHATMA GANDHI UNIVERSITY

No.6721/88/AII(1)/Admn.

18.2.1993

NOTIFICATION

Applications in the prescribed form are invited from qualified candidates for appointment to the following posts in the University. The appointments will be governed by the provisions of the Mahatma Gandhi University Act and the statutes and Ordinances applicable thereunder.

Sl.No.	Name of post	No.of posts	Scale of pay	Specialisation if any	Reservation if any
1.	Director/Professor School of Indian Legal Thought	1	Rs.4500-7300	-	Open
2.	Director/Professor School of Pedagogical Sciences	1	Rs.4500-7300	-	Open
3.	Lecturer School of Indian Legal Thought	2	Rs.2200-4000	-	One post open. One post reserved for Ezhava/Thiyya /Billava

Application forms alongwith details regarding qualifications for the posts, age limits and application fee can be had directly or by post from the Deputy Registrar, Administration II, Mahatma Gandhi University, Priyadarshini Hills P.O., Kottayam 686 560 on payment of Rs.20/- (rupees twenty only) to be remitted by pay-in-slip in the current account of Mahatma Gandhi University with the SBT or in the Government treasury under the Head of Account "MGUF-8658". Applicants from outside the state shall remit the prescribed fee for application form by crossed postal order/Demand Draft drawn in favour of the Finance Officer, Mahatma Gandhi University, payable at Priyadarshini Hills (PO) SBT Athirampuzha. Those who wish to get the application form by post shall send a self addressed envelope of size 27cm x 12cm, affixing stamps worth Rs.2/-. Last date for receipt of filled in applications at this office is 3.4.1993.

Office of the
Mahatma Gandhi University
Priyadarsini Hills P.O.
Kottayam

Dr. M C CHACKO
REGISTRAR

INDIAN COUNCIL OF AGRICULTURAL RESEARCH

VASANT RAO NAIK AWARD FOR RESEARCH APPLICATION IN AGRICULTURE FOR THE YEAR -1993

Nominations are invited for the Vasant Rao Naik Award for Research Application in Agriculture for the year 1993. One award of the value of Rs. 1,00,000/- in cash is given annually to a scientist or Extension Worker who has made outstanding contribution in the areas of Water Conservation and Dryland Farming.

All Scientists engaged in research in the fields of Water Conservation and Dryland Farming in India shall be eligible for the award. The results of researches achieved/contributions made during the five years preceding the year of the award shall be considered for the award. In the case of a claim based on evolution of new varieties, the final trial should have been completed within the five years preceding the year of the award.

Nominations can be made amongst others by Vice-Chancellors of agricultural universities or other universities having faculty of agricultural or biological sciences, Directors of Research Institutes, including Principals of agricultural and veterinary colleges, Presidents of Scientific Societies, Academies and heads of the Principal Scientific establishments in the country.

Nominations for the awards should be supported by a statement of work, achievement accomplished or performed by the candidate who is being nominated and a reasoned justifications or other supporting data.

The last date for receiving nomination for the award is **30th April '93**. The last date for candidates in the Andaman and Nicobar Islands, Lakshdweep, States/Union Territory in the North Eastern Region, Ladakh Division of the J&K States and Sikkim is **10th May '93**. Five copies of the nominations on the prescribed proforma for the award should be sent in a sealed cover marked 'Confidential' to Shri K.L. Bokolia, Deputy Secretary (B) Indian Council of Agricultural Research, Krishi Bhawan, New Delhi. The copy of the proforma can be obtained from him by sending a self addressed envelope of the size of 27 cm x 12 cm. Such requests should be received by **10th April '93**. Application/nominations received without five sets of reprints of publications are liable to be rejected at the scrutiny stage.

THE OXFORD & CAMBRIDGE SOCIETY OF INDIA

SCHOLARSHIPS

1993

The Oxford and Cambridge Society of India invites applications for scholarships being awarded for study at the Universities of Oxford or Cambridge beginning from October 1993. Applicants must hold at least a first class Honours degree or its equivalent from a recognised Indian University. This should be their first opportunity to study abroad. They should have obtained admission to one of the colleges of Oxford or Cambridge, to pursue a course or study leading to the degrees of B.A. (with senior status at Oxford, or affiliated status at Cambridge), M.Sc./M.Litt/M.Phil/B.Phil or D.Phil/Ph.D. The scholarship amount, worth Rs. 50,000/- each will be paid into the Scholar-elect's bank account in India once he or she has joined Oxford or Cambridge.

Each candidate will be asked to submit along with the application form the following material :

1. Attested copies of degrees obtained.
2. Certificate of age.
3. Medical Certificate.
4. Two passport size photographs.
5. An essay in 400-600 words (preferably typed) indicating the candidates academic and extra curricular interests and achievements, and the reasons for pursuing a course of study at Oxford or Cambridge.
6. Copy of letter of admission to a college in Oxford or Cambridge.

The Scholarship would be awarded on the basis of a candidate's attainments, potential for excellence and the relevance of the course of studies chosen to later life. Candidates shortlisted would be invited for interviews to be held in Delhi in May 1993.

Application forms may be obtained by sending a self-addressed Re. 1/- stamped envelope (9ins x 4 ins) to the Hony. President, Oxford and Cambridge Society of India, 35-A, Friends Colony (East), New Delhi-110 065. The last date for receiving completed Application Forms is 5th April 1993.

BOOKS FROM ORIENT LONGMAN

Industrial Control and Instrumentation - W.Bolton

The basic aim of this text is to provide a comprehensive introduction to the principles of industrial control and instrumentation. The author not only outlines the basic concepts and terminology of measurement and control systems, he also discusses, in detail, the elements used to build up such systems. As well as a final consideration of measurement and control systems, each chapter concludes with relevant problems in order that students can test their newly acquired knowledge as they progress.

Rs 70.00

Instrumentation and Process Measurements - W.Bolton

The book gives an overview of instrument systems, followed by a look at the constituent elements of such systems, a discussion of measurement systems for process variables and the maintenance of instrument systems. All chapters include worked examples and problems, with answers appearing at the end of the book.

The text is intended for courses where a basic introduction to instrumentation system and process measurements is required.

Rs.50.00



Orient Longman

Orient Longman Ltd.

3-6-272, Himayatnagar, Hyderabad - 500 029.

VISVA-BHARATI

VINAYA-BHAVANA

Santiniketan Birbhum, West Bengal

Applications on prescribed forms to be filled in by candidates' own handwriting are invited for admission to one-year B.Ed. and M.Ed. courses for the session 1993-94 which begins in July.

A. Minimum qualifications for application for admission to B.Ed. Course :

- i) For Fresher candidates - should have passed B.A./B.Sc. Examination with any two of the following subjects and with at least second class HONOURS in any one of them : Bengali, English, Hindi, Sanskrit, History, Geography, Mathematics, Physics/Chemistry, Life Science (Botany/Zoology). *No compulsory additional subject* read at the undergraduate course shall be considered for the above purpose. Fresher candidates without having Honours or M.A./M.Sc. degree in any of the above subjects need not apply. There will be an admission test (both written and oral).
- ii) For deputed candidates - should have passed B.A./B.Sc. Examination with any two subjects mentioned in (i) above. Continuous teaching experience as an approved teacher in a recognized secondary school will be taken into account for selection alongwith the M/C resolution of the school concerned.

B. Minimum qualifications for application for admission to M.Ed. course.

Candidates should possess at least a second class B.Ed./B.T./P.G.B.T. degree from a recognised college/institution. Selection will be made on the basis of academic achievement and admission test to be conducted by the Department.

Reservation of seats :

As per Government rules.

Prescribed application forms may be obtained from the office of the Principal, Vinaya-Bhavana, Visva-Bharati, P.O - Santiniketan - 731235, Dist. - Birbhum (West Bengal) by sending a crossed Indian Postal Order for Rs. 5/- payable to the 'Accounts Officer', Visva-Bharati, Santiniketan - 731235 (W.B.) and also a self-addressed envelope (23 cm. x 10 cm.) affixed with postage stamps worth Rs. 2/- only. Application forms may also be obtained personally from the Office of the Principal, Vinaya-Bhavana, Santiniketan on production of a Cash coupon for Rs. 5/- only to be issued from the Office of the Accounts Officer, Visva-Bharati, Santiniketan. Applications duly filled in and completed in all respects should reach the Principal, Vinaya-Bhavana on or before 31st March, 1993.

N.B. : *Incomplete applications in any form are liable to be rejected.* Rights of cancellation of selection/admission lie with the Admission Committee of the Bhavana. Visva-Bharati remains closed on Tuesday afternoon and Wednesday (Weekly holiday).

Nehru Champion Colleges Hockey Tournament



Shri M.S. Bhagwat, Secretary, Department of Youth Affairs & Sports being introduced to the participating teams. He is accompanied by Prof. K.B. Powar, Secretary General, AIU and Prof. Saiyid Hamid, Chairman Organising Committee and former VC, Aligarh Muslim University.

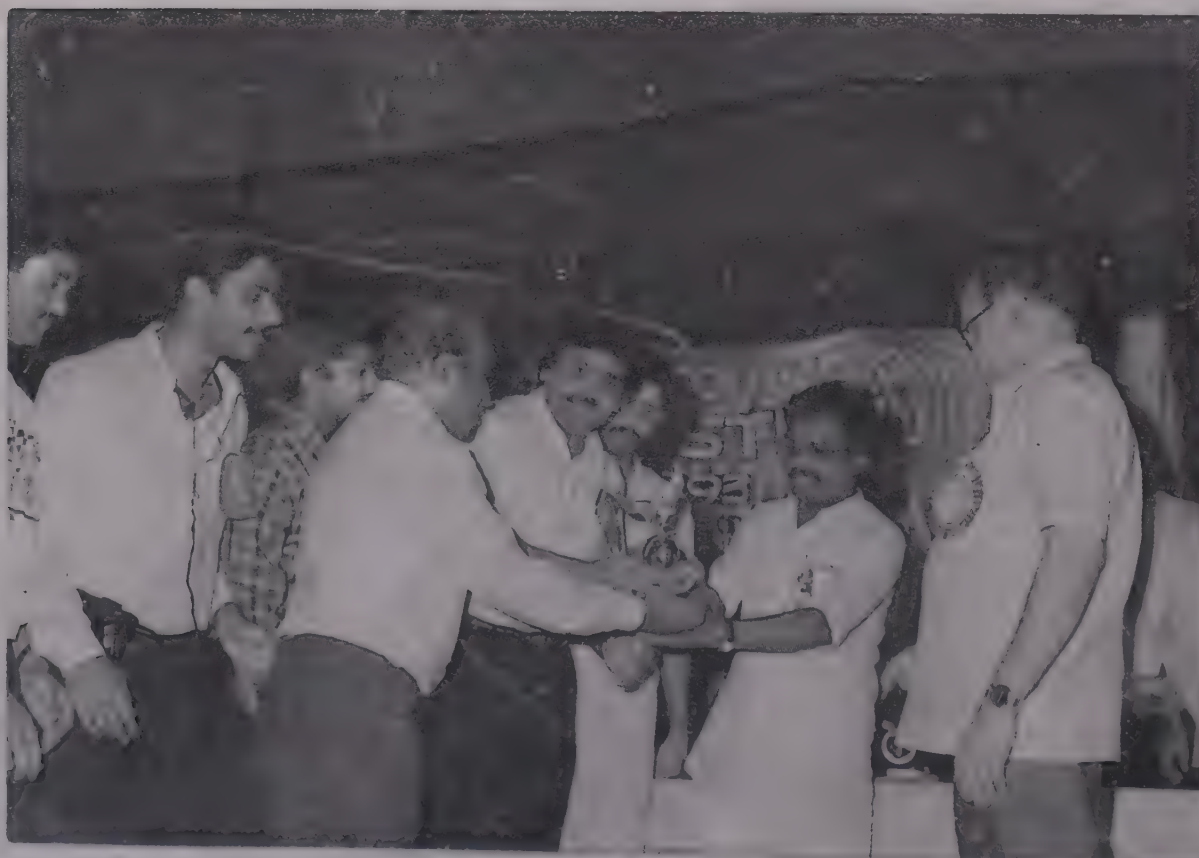


Dr. S.N. Das, Director (Personnel), Steel Authority of India Ltd. awarding the cash prizes at the concluding function. On his right are Prof. S.K. Agrawala and Prof. K.B. Powar, former and present Secretary General, AIU respectively.

South Zone Youth Festival



A view of the March past by the participants



Mr E.T. Mohammed Basheer, Kerala State Minister of Youth Affairs & Sports giving away the prizes. He is flanked by Mr. Sampson David, Sr. Cultural Officer, AIU (left) and Prof. A.N.P. Ummerkutty, Vice-Chancellor (Right).

University News

MONDAY, MARCH 15, 1993

Rs. 5.00

Gulbarga University Convocation



From L to R : Sri M.N. Vijayakumar, Registrar, Sri S.M. Yahya, Pro-Chancellor and Minister for Higher Education, Government of Karnataka, Sri Shivaraj Patil, Speaker, Lok Sabha, who delivered the convocation address, and Dr. N.Rudraiah, Vice-Chancellor of the University.

**NATIONAL DAIRY RESEARCH INSTITUTE
(DEEMED UNIVERSITY)
(INDIAN COUNCIL OF AGRICULTURAL RESEARCH)
KARNAL-132 001 (HARYANA)**

ADMISSION NOTICE - 1993-94

A competitive written examination on all India basis for admission to Ist year B.Tech. (Dairy Technology), M.Sc. Dairying and Ph.D. Dairying in the following disciplines will be held at different centres of the country on 23rd and 24th June, 1993.

A. B.Tech. (Dairy Technology) :

Eligibility : 10+2 or its equivalent examination with Physics, Chemistry, Mathematics and English from a recognised Board/University with 55 percent marks (50 percent marks for SC/ST candidates) or equivalent GPA in the aggregate of Physics, Chemistry and Mathematics.

The duration of B.Tech. (Dairy Technology) is four years.

B. M.Sc. Dairying in Dairy Microbiology, Dairy Chemistry, Dairy Technology, Animal Genetics & Breeding, Livestock Production & Management, Animal Nutrition, Animal Physiology, Animal Biochemistry, Dairy Economics, Dairy Extension, Dairy Engineering and Animal Biotechnology.

Eligibility : Bachelor's degree with 55 percent marks (50 percent for SC/ST candidates) or equivalent GPA in Pure Sciences, Agriculture, Veterinary Science, Animal Sciences, Dairying, Food Technology, Engineering and Home Science.

The duration of M.Sc. Dairying is minimum of 3 years for Graduates in Pure Sciences and 2 years for Graduates with professional degree. However, it will be three years for those admitted to M.Sc. Dairy Engineering with a degree of B.Sc./B.Tech. (DT).

C. Ph.D. Dairying in all the above disciplines as in 'B' except Animal Biotechnology.

Eligibility : Master's degree with 55 percent marks (50 percent for SC/ST candidates) or equivalent GPA in Dairying, Agriculture, Veterinary Science, Biotechnology, Pure Sciences, Food Technology, Engineering, Home Science etc.

The duration of Ph.D. Dairying is minimum of 2 1/2 years, which includes one year of course work.

Reservation :

Fifteen percent of total seats in each programme are reserved for Scheduled Caste and 7.5 percent

for Scheduled Tribe candidates subject to their being otherwise eligible.

Last date for receipt of applications completed in all respects and accompanied with the prescribed examination fee in this office is 17th May, 1993.

How to Apply : Information Bulletin containing all details along with prescribed application form can be obtained by post from Joint Director, National Dairy Research Institute, Karnal-132001 (Haryana) by submitting a Bank Draft for Rs. 20/-. The Bank Draft should be drawn in favour of "ICAR UNIT, NDRI, KARNAL" Payable on any nationalised Bank at Karnal. Indian Postal Orders or Money Orders will not be accepted. The candidates should also send a self-addressed envelope of minimum size of 20" x 25" with Rs. 3/- worth stamp (Rs. 8/- worth stamp, if required by registered post) affixed and subscribing the course on the left hand top corner. Information Bulletin and Application Form will be available by post from 30.3.1993 to 5.5.1993.

It can also be obtained in person from the Counter of State Bank of Patiala, N.D.R.I. Branch, Karnal against cash payment until 17th May, 1993.

Information Bulletin and Application Form are printed for B.Tech., M.Sc. and Ph.D. courses separately. The candidate while submitting the demand draft for Rs. 20/- should clearly specify for which specific course he requires the Information Bulletin and Application Form.

While requesting for Information Bulletin and Application Form following information should be given :

1. Name (in capital letters)
2. Full address with PIN Code (in capital letters)
3. The Course in which the Candidate wants admission (State only one of the following : B.Tech./M.Sc./Ph.D.)
4. Details of the Bank Draft enclosed i.e. (a) Name of Issuing Bank; (b) Bank Draft No., Date and Amount.

Note : Those who have appeared at the qualifying examinations and awaiting for the final result can also apply. But the marks and result of the qualifying examination should be submitted to the Joint Director, N.D.R.I., Karnal-132001 positively by the date stipulated in the Information Bulletin.

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IN THIS ISSUE

Of Vice-Chancellorship and Vice-Chancellors	4
Value Inculcation Through Teacher Training	6
Professional Development of Teachers in Higher Education in India and Abroad	8
Convocation	
Gulbarga University, Gulbarga	12
Campus News	
Technology Policy Draft Released	13
Andhra University Convocation	13
Magnetic Lab at Pondy Varsity	14
Industry & Technical Education	15
International Education Commission	16
Journalism School Opened	17
Agriculture	
Agricultural Human Resource Development	18
Sanchar Bhavan at Raipur	18
News from Abroad	
Philippe Laudat Conference 1993	19
Future Trends and Challenges in Engineering Education	19
Book Review	20
Research in Progress	22
Theses of the Month	24
Education News Index	27

Opinions expressed in the articles are those of the contributors and do not necessarily reflect the policies of the Association.

Editor :
SUTINDER SINGH

PATH TO PEACE FROM ANARCHY TO ANARCHISM

S. Abdul Kareem*

Why is there, almost everywhere, a muscle for destruction and not a mind for creativity? Violence let loose by the present day youth is almost a daily affair. The rampages of the restive youth have not spared any, much less themselves. Broad-minded liberals explain it away by internationalising the issue, while impatient reformers hark back to indigenous prescriptions. Academicians find something endemic in this virulent epidemic. The malady is too deep-rooted for any remedy. This global phenomenon has produced more consuming heat rather than any clarifying light. The outcome is exasperation, total and complete.

At a lower key, how many times are we not confronted with what are mildly termed 'law and order' situations? These are all the culminations of the young men taking law into their hands, instead into their heads! As a result, the world has witnessed one more potential source of power, the student power, more explosive than any that could be had from the hardware of the nuclear arsenals. The energy that this releases is so stupendous that no atomic reactor is worth its job of channelising it. Only education ought to have set in motion a chain reaction – between man and environment – to conserve and contain this ebullient and nascent energy. But our education has failed us. We feel letdown. The students, 'the seedlings of the future' to quote Rajaji, have almost grown into weeds and the flower beds into unweeded gardens. Frustration stalks the ground and desperation looms large. The whole climate of the society is vitiated. The ethos on the home front has to be revamped. The change-over on the part of the youth from the home to the world is fraught with dangers, since the homes have failed to make men of these masses and the world has come to harbour all ideologies, fair and foul. When the passions are whipped up, adolescence bubbles to the brim only to get wasted. Responsible adulthood is nowhere in sight.

Student Activism

This brings us to the oft-repeated question : whether it is desirable for the youth to take part in politics or should they be isolated and insulated, as it were from the strong currents working at cross purposes? Should they not form the advance guard of the political movements? These tantalising questions raise one more doubt : Are these half-informed minds in form? The way they take to the streets is an exhibition of absurdism. The active participation (action packed as it is) of youth, their running parallel parties and organisations have all paved the way to student activism. Much of what they do is in the nature of an insurrection or a rebellion, not a revolution, guided as they have been by their instinct and not by sound doctrines of social change. Prolonged as these are beyond reasonable limits, they have shown signs of adopting them as regular ways of life. It is no wonder they engender new ways of dying. Revolutions, rare as they are, are welcome sometimes as extreme remedies to cure the ills of the society. But they cannot bid fair to become their daily bread, in the words of Burke. No one can deny the presence of rebellion at the basis of these struggles. No less a thinker than Albert Camus confirms that rebellion recreates moderation as a necessity in consequence even as a storm does yield to calm.

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Hence the right attitude should be to give oneself to political thought and not to political action – in a way, to a life of thought rather than of action, though the latter cannot be lost sight of. How many of us are capable of venturing ourselves in the adventure of ideas? The clash of ideas could be more thrilling than the clash of armies, if only we take to the liberal methods of debate and discussion. Knowledge must precede action if our doings are to be deeds and not misdeeds. It is all a question of timing our programmes, what otherwise would be too hasty, too ill-formed and too unadvised.

This may sound yet another platitude fit enough to be pronounced from the house tops. A closer look, with insight and imagination, would reveal the predicament of an intellectual in a society he thinks he cannot better, against which he stands pitted. The young mind imbued with idealism of the world of books, sees in his society a travesty of his ideals, a tragedy of his dreams. The intellectual, feeling desperate like Hamlet, would sigh out: 'Oh cursed spite that I was ever born to set it right'. When he takes to action and comes out into the streets, becomes one with the irate crowd, he loses his name and identity. Nothing short of action, mass action, may direct action satisfies him. When passions run amuck, this mass may turn ruthless. It was Goethe who said: 'A man of action is always ruthless; no one has a conscience but an observer.'

The turbulent youth riding rough shod over this mounting wave are compelled to jump into the fray as they see the prevalence of double standards in their elders. Conservatives to the core in politics and economic affairs, these elders, giving themselves moral holidays in metropolitan cities, become liberals in morals. This double dealing has, ultimately to be traced back to the wealth, the source of all possible friction. The burning idealism of the youth has seen this deterioration in the norms of public life. It is because of this they are up in arms for the causes deserted by their elders. Hence consultations and counselling are thrown overboard and confrontation has come to stay. Violence has paid dividend and acts of violence have become the order of the day. Armed with unaccountability, the unleashing of the brute force is complete creating a nightmare in the broad day light!

Anarchism

Of late there have been attempts to bolster up a philosophy to countenance the challenges of critics that youth action is all action minus principles. Hence anarchy has made out a case for anarchism to give content to their action and a meaning to their muscles.

What, after all, is this anarchist thinking that has been so eulogized and extolled? Western parallels, though they come handy, are far from being healthy. Anarchism is a philosophy of a new social order based on liberty,

unrestricted by man-made laws. To some extent, it appears to be akin to wild Bohemianism, since it welcomes gay disorderliness of life, cheerful bad manners. With Dostovski, Baudelaire and Rimbaud, the irrational impulse has become largely accepted in total contravention to progressive elimination of the evil.

To some, anarchism constitutes the politics of the absurd. It states that all forms of government rest on violence. The state stands devalued and becomes almost an anachronism. It becomes the biggest stumbling block. It is no longer deified, it is defied. A definitive withering away of the state is, no doubt, Marxian, but a total denial is anarchistic. The individuality of man is inflated to the bursting point like the frog in the fable. Organised authority becomes, irksome. Parental pieties are fluted, conventional conformity is thrown overboard. The rule of law is resented.

Strangely enough, the anarchists justify their stand that anarchism is the answer to the ills of the society badgered and battered by social law and corrupt practices, quoting authoritatively the traditions of Thoreau, deliberately omitting the pronouncements of Nietzsche. Since liberty is guaranteed by law, the anarchist prefers freedom to liberty. To him freedom is essentially a positive condition. A little digression into the etymology of the word 'freedom' is quite interesting. The word 'free' is derived from the Old English *f r ē o n*, which means, to love, (Sanskrit *Pri*, to love) and therefore it means a friendly attitude. Liberty is a legal phrase derived from Latin and is used to describe the emancipation from the masterslave relationship. Anarchism, from this stand point, is not merely a religion of liberty but a faith generated by freedom.

Why is it that the anarchists are hostile to laws except their own? They seem to take their cue from Rousseau who held that 'laws are useful to those who own, and injurious to those who do not. Laws give the weak new burdens and the strong new powers.' To them,, legal strictures are the very antithesis to liberty, rather its very negation. They resent the very functioning of the state as against individual freedom with the result that of the state has been brought to the vanishing point. This theme of the total abolition of laws was dear to Godwin and sung by Shelley to whom the state was 'the coldest of all cold monsters'. Proudhon, the sworn anarchist has proclaimed that 'the government of man by man in every form is slavery.' A host of other luminaries, Whitman, Thoreau and Emerson had subscribed unequivocally to the Jeffersonian ideal that 'that government is best which governs the least,' nay, which doesn't govern at all!

An anarchist is not a rootless being, but he has enough authority to buttress his shaky edifice. Taking the famous phrase of George Santayana, Will Durant

10 MAR 1993

argues that 'everything artificial has a natural origin, and everything natural has an artificial development. Expression is natural, language is artificial; religion is natural, the church is artificial, society is natural, the state is artificial.' Durant's fine eulogy of anarchism culminates in the climax: "We are anarchist by nature and citizens by suggestion."

What is without a ruler, as is made out from the root meaning of anarchism, surprisingly is not without order. It has its own sense of order. However, this does not mean that the rule of anarchism can be a substitute to the rule of law. The rule of anarchism has inherent contradictions, since anarchism means a society without an 'archkos' that is to say, without a ruler. And a rule without a ruler is not rule at all.

Proudhon advocated that the highest perfection is to be found in the union of order and anarchy. The rule of law as prescribed by the state should come nearer to the laws of nature. The vast potentialities of nature could be commanded only by obeying its natural laws. The coming together of these apparent irreconcilables – order and anarchy – could fashion an utopia. In such a society of utopian idealism, one can visualise men working according to their abilities and receiving according to their needs. Would this not make cooperation a sound basis and egalitarian society, a reality. The real villain in such a realm is the wealth and property that the state is called upon to protect, which in turn is the source of all inequities. It is in this context that the state becomes its 'night watchman'. Thus anarchism bids fair to create the health of the nations, though not the wealth.

Much of our present lawlessness may be the result of law being thrust down man's throat restlessly. Force is repression and repression leads to sharp reaction. Such programmes of legislation resorting to repressive measures herald doom to the individual though a boon to the state. A little too much of the law, we convert a half-hearted sinner into a confirmed criminal. The tensions which such successive legislation creates, causes frayed nerves, the very prospect to be dreaded if we heed to Russell. Shall we not caution the law-makers to be a little more considerate with that law-breakers? If one is to deal with them with insight and imagination, should one not practise moderation? Too much of disciplining from above could be nearer to tyranny even as the total lack of it could be nearer to chaos. Governing with love, as enjoined by Lao Tsu, of course, is ruled out in modern times. Where enforcement has not yielded any appreciable dividend, it is wise to repose our trust in moderation. Instead of blind enforcement of laws, it is advisable to allow these to become a force of habit, if not a passion.

Having a recourse to such remedies is more to be desired than to be had. To expect the irate youth, given to doing things as they like, to cultivate tolerance, charity

and compassion is to ask for the impossible. To initiate a chain reaction between adherence to law and a corresponding inner transformation is highly desirable but unfortunately it is not so easily made possible for the mere want of know-how. Obviously laws deal with external action and morality with the internal and hence intangible ways of behaviour.

Baffled with such dilemmas, the half-informed ones find themselves in a blind alley, the ill-informed on the streets rioting and some rotting. All this happens in the crowded towns and metropolitan cities which breed anonymity. It is in this melting pot that the youth have lost their individuality, which has made room for psychosis. De-individuation, coming close on the heels of loss of their identity, drives them to destructive behaviour. Moreover, our education has created a rift between life and learning. As a result, the youth feel alienated from the society, estranged from themselves.

Role of Education

A change over from anarchy to anarchism amounts to jumping from the frying pan into the actual fire. Neither can spell sanity. To counteract these evils, perhaps, there is nothing that we can fall back upon except education. It is education, education alone that too of the right type that can lift us out of this present morass. Education has done, at least to some, all that it could to help develop individual uniqueness. But simultaneous with this, education has a social function too. The sophistry of our unimaginative yet prestigious education has widened the gap between the educated ones and the less fortunate segments of society. How could there be any 'social contract' when the living contact itself is thus broken? Our education must generate social consciousness, for it is not only a process of individuation, but also of integration which, in the words of Herbert Read, 'is the reconciliation of individual uniqueness with social unity'.

There is nothing of a participating spirit on the part of the individual in our democracy. It is not that an adult is important only once in five years. The need of the hour is as much to involve the people in the task of economic development as in creating public opinion for effecting an orderly social change by harnessing the unleashed forces of organised disruption and personal denigration. A war effort is what it is, directed towards attaining a particular goal, because of the sense of the participation and the people's involvement in it. The reconstitution of the youth in the society must be tackled on a war footing. Education can be a potent force creating this new awareness and forging the new links. It is for the government to realise that its function is not merely to legislate but also to educate.

OF VICE-CHANCELLORSHIP AND VICE-CHANCELLORS

M.I. Savadatti*

Indian Vice-Chancellorship is a reactive job. Vice-Chancellors define their role as a responsive one. They worry about the concerns of government, community leaders, students, faculty members, law enforcement officials. They see themselves as trying to reconcile the conflicting pressures on the university. They allocate their time by a process that is largely controlled by the desires of others. Though they are, for the most part, individuals of considerable energy, they often become tired.

The Vice-Chancellorship is a parochial job. Vice-Chancellors are normally not strangers to the institutions that choose them. Although they have typically worked in one or two other universities, the universities are similar in type and close in geography. Insofar as a Vice-Chancellor compares his performance with other Vice-Chancellors, he tends to compare it with a group of Vice-Chancellors who are in his own experiential "neighbourhood." Insofar as he is visible through the media, he is ordinarily visible only to his local community.

Vice-Chancellors are academics. Their careers are almost entirely in academic institutions; their values are those of academe. The details of their values vary considerably. The academic creed of a small, marginally surviving subject related school is not the same as that of a major prestigious university, and Vice-Chancellors reflect that variability. Since the academic creed is not completely different from the general organizational creed, Vice-Chancellors are similar in many ways to administrative heads of other kinds of institutions. Nevertheless, they are recognizable as products of academe.

The Vice-Chancellorship is conventional. The Vice-Chancellor comes to his job through a series of filters

that are socially conservative vis-a-vis his major constituents. He sees his job in the standard terms reported in the academic and management literature. He allocates his time in response to a series of conventional expectations. He leaves and enters his job in a manner that has strong normative components. The Vice-Chancellor cannot effectively argue with conventional claims on him; nor does he really wish to do so. His actions, his activities, and his self-perceptions are constrained within social expectations that he accepts as essentially legitimate.

The Vice-Chancellorship is important to the Vice-Chancellor. It is the peak of his career. He obtains the job as a reward for his previous record. It is the best job he has ever had or is likely to have. It is a mark of his success. His self-esteem depends on being viewed as a good Vice-Chancellor, but his reputation depends on the reputation of the university more than it does on his activities as Vice-Chancellor. Although the route to the job is clearly not random, each Vice-Chancellor's "career" tends to be a post factum construct. Typically, each stage of his career is a relatively discrete event produced by a vacancy.

The Vice-Chancellorship is an illusion. Important aspects of the role seem to disappear on close examination. In particular, decision making in the university seems to result extensively from a process that decouples problems and choices and makes the Vice-Chancellor's role more commonly sporadic and symbolic than significant. Compared to the heroic expectations he and others might have, the Vice-Chancellor has modest control over the events of university life. The contributions he makes can easily be swamped by outside events or the diffuse qualities of university decision making.

In a way, these major features of the Vice-Chancellorship and Vice-Chancellors need to be elaborated and interpreted within an understanding of the university as an organization. It belongs to a class of organizations that can be called organized anarchies.

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The university is a prototypic organized anarchy. It does not know what it is doing. Its goals are either vague or in dispute. Its technology is familiar but not understood. Its major participants wander in and out of the organization. These factors do not make a university a bad organization or a disorganized one: but they do make it a problem to describe, understand, and lead. As the head of such an organization, how can a Vice-Chancellor set specific organizational goals? What can he accomplish? How can he use his experience? And finally, how does he measure his success or failure?

With respect to a behavioural theory of organization, we need to investigate two major phenomena that are critical to an understanding of the kind of organizations described above. First, we need a better understanding of the processes used to make choices without the guidance of consistent, shared goals. It is clear that organizations sometimes make choices without clear goals. Decision making under ambiguity is common in complex organizations, particularly those outside the sector of private enterprise. Decisions appear often to be made without recourse either to explicit markets or to explicit bargaining (the two processes most commonly cited as procedures for decision making in the absence of consensus). Second, we need to study the process by which members of the organization are activated, by which occasional members become active ones, by which attention is directed toward, or away from the organization. Not everyone in an organization is attending to everything all the time; and we need to understand how to predict the attention pattern within the organization.

With respect to normative theory, organized anarchies pose three major problems. First, we need to develop a normative theory of intelligent decision making in situations in which goals are unknown (i.e. under ambiguity). Can we provide some meaning for intelligence that does not depend on relating current action to known goals? We are convinced it is possible. We are far from certain what the theory will look like. Second, we need a normative theory of attention. Managers and others who might participate in an organization operate within the constraint of a scarce resource – the attention they can devote to the various things demanding their attention. In organizations such as those described above, in which a substantial part of the variability in behaviour stems from variations in who is attending to what, decisions about the allocation of attention are primary. Third, organized anarchies require a new theory of management. Much of our present theory of management introduces mechanisms for control and coordination that assume the existence of well-defined goals and technology, as well as substan-

tial participant involvement in the affairs of the organization. When goals and technology are hazy and participation is fluid, many of the axioms and standard procedures of management collapse.

The world may collapse tomorrow; it may not. The university may survive another ten years; it may not. The differences are important, and the problems are serious. But the outcomes do not much depend on the Vice-Chancellor. He is human. His capabilities are limited, and his responsibility is limited by his capabilities. We believe there are modest gains to be made by making some changes in the perception of his role. We believe Vice-Chancellors can be more effective and more relaxed. We do not believe in magic.

(This is adapted from the book 'Leadership and Ambiguity – The American College President' by Michael D. Cohen and James G. March published in 1974. It is rather surprising how the article fits Indian Vice-Chancellors in 1993 – almost after 20 years!.)

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Value Inculcation Through Teacher Training

J.S. Rajput*

The paramount concern of universalisation of elementary education is to improve the quality of human life. In our context, considerable efforts are still needed to achieve the goal of providing basic education to all children in the age group 6-14 years. The expansion of education has also to be coupled with relevance of curriculum and quality of education imparted. These aspects are receiving attention at policy level as well as at the implementation level. It is now well realised that education has to be much more than preparing the learners to pass certain examinations. It has to prepare 'people' who would respect others around them. This respect, regard and understanding would extend to the cultural heritage, religious multiplicity and faith in the values that are enshrined in the Constitution of the country.

The quality of education would be linked to the way teacher training institutions function in the country. There are more than 1200 training institutions for elementary stage and more than 500 for secondary level teachers.

DIETs

A major initiative was taken in 1986-87 to strengthen and restructure teacher education in the country. The intention was to augment a large number of these institutions with necessary equipment, building and faculty. This could enable these institutions to function as resource centres and provide quality training to the trainees. The most significant component of this initiative was upgradation of teacher training institutions for elementary stage in each district of the country.

The District Institutes of Education and Training (DIETs) are being set up to provide academic resource support to all aspects of school education at the district level. These are to assist in successful implementation of various strategies and programmes being undertaken in the areas of formal, non-formal and adult education. These have been perceived as pace setting institutions that would contribute through excellence in the institution's own tasks and through providing necessary

help and assistance to the elementary and adult education systems in achieving 'excellence'. DIETs are supposed to prepare pre-service teachers for primary and upper primary schools, professionally equip those already in job and assist them in meeting their professional and academic needs. Eventually it is teachers' performance which is crucial to the teaching learning process. Teachers implement policies 'as much through their personal example as through the teaching learning process'. The Education Commission (1964-66), popularly known as Kothari Commission, echoed the same concept when it remarked that 'the quality of training institutions remains, with a few exceptions, either impeded or poor'. The establishment of DIETs under a centrally-sponsored scheme in 1986-87 could very well be interpreted as a realistic and objective appraisal of the situation prevailing in training institutions. It was a much needed initiative to meet the changing needs of the systems responsible for extending the outreach of elementary education and adult literacy. 307 such institutions have already been approved and more than half of these are already operational. In addition to the establishment of DIETs, the colleges of teacher training are also being upgraded. More than forty colleges and university departments have been provided assistance from Government of India and are now functioning as upgraded Colleges of Teacher Education or Institutes of Advanced Studies in Education. These could upgrade the quality of training at secondary and senior secondary stage. Further, these could provide necessary research inputs, considered so crucial for training strategies, curriculum development and other areas.

Strategies for Value Inculcation

The mission, role and functioning of these institutions are gradually taking shape in actual implementation. To achieve excellence, one crucial aspect would be the emphasis laid on standards being set by the staff through personal example and through the strategies adopted for value inculcation. There has been a global acceptance of the need to strengthen the content of education relating to humanistic, ethical, moral and cultural values in education, both in formal systems as well as non-formal systems. It is generally being accepted that solution to some of the most serious crises, such as, environmental policy, consumerism, family wel-

* Joint Educational Adviser, Department of Education, Ministry of Human Resource Development, New Delhi-110001.

fare, discrimination, poverty, exploitation and marginalisation of people are to be found not only in eradication of ignorance about these crises through knowledge change but also in regard to the preparedness to face the intrinsic moral and values issues.

The teachers and teacher educators are normally not unfamiliar with the need for value inculcation. Values permeate the entire process of education at each stage and age. It is also clear that school education alone could not be assigned the total responsibility of value inculcation. However, institutions like DIETs, could contribute effectively with an eye on the multiplier effect. Such institutions need to remain ever conscious of their primary task of assisting in value formation and in value inculcation. While individual teachers could adopt their own strategies, an institutional plan could also be developed and implemented without much need for financial inputs or resources. The components of such an institutional plan could include the following :

- i) A critical look at the curriculum materials from the point of view of potentialities and possibilities of utilising these towards value enrichment without affecting the adopted teaching learning strategies;
- ii) Identify and organise co-curricular and extra-curricular activities which help in value education by observation, experience and inference. There is no need to publicise these as value inculcation efforts;
- iii) Learner and faculty interaction to appreciate and understand innovations and initiatives of voluntary efforts. Those working voluntarily for the deprived and downtrodden could also join in some of these interactions;
- iv) Utilisation of available folklore, national monuments, forms of folk culture and indigenous expertise to imbibe a sense of belonging and pride;
- v) Critical analysis and discussion amongst the peers and with the knowledgeable could lead to appreciation of rationality and acceptance of positive impacts of science and technology. Environment, energy, pollution, population and such other areas could be the talking points;
- vi) Utilisation of community resources and expertise through intensive interaction by making the community feel that the institution works for them and that it is functioning for improving the quality of life in general and through the instructional strategies in particular;

- vii) Providing interaction opportunities with persons of unimpeachable character, creative abilities, literary tastes, scholarly attitudes whose mere presence could motivate others;
- viii) Developing an interactive environment in the institution which nurtures response for knowledge, scholarship, learning and willingness to take responsibilities. Participatory programme like dances, dramas, debates sports in which both the staff and the students participate could enliven the atmosphere;
- ix) Make the institutions responsive to emergent situations like floods, fire, drought, etc. This would strengthen mutual relationship with the society;
- x) Visits to institutions, establishments, centres of creative arts, zoos, museums and to homes for the aged and handicapped not only enhance knowledge, understanding but also generate appreciation and empathy;
- xi) All functions, programmes, celebrations, gatherings need to ensure that no group or community feels neglected or isolated;
- xii) Cleanliness within the institution helps, in a big way, every individual. Development of aesthetic sensibilities is a basic imperative of individual preparation;
- xiii) Examples from social life of the institutions and community that reinforce human aspects of individual efforts and group efforts need to be disseminated and discussed. These create a lasting impression; and
- xiv) It is always possible to innovate new techniques and methods to understand the changes taking place in a particular society. The stress they are creating on the established traditional values also needs to be monitored continuously. This indicates the need for a regular programme of developmental and action research in the institution.

These are some of the possibilities. Several others could be identified depending on the specific needs and requirements of a particular institution. The faculty could sit together and evolve a plan of action on the yearly basis. It could also be possible to assess the outcomes of the efforts at the end of the year. The Head of the Institution could help develop an annual plan. This may be discussed with all the teachers before its finalisation. The group may subsequently meet at least once a month to monitor the outcomes.

Professional Development of Teachers in Higher Education in India and Abroad

J.N. Kapur*

What is Professional Development of Teachers ?

The professional development of a teacher essentially consists of three components :

- a) *Development of pedagogic skills of the teacher* i.e. he should become a better communicator of knowledge with every passing day by utilising all the present day knowledge of psychology of learning, use of audio-visual-aids etc. aiming at optimum learning by the students.
- b) *Development of mastering of a subject by the teacher* i.e. he should become a better and better expert in his subject with every passing day. The teacher has to know much more than what he is teaching and know it in great depth. He has to constantly grow in knowledge by his own efforts and also through summer schools, refresher courses, conference and symposia. Knowledge of every subject is growing exponentially and teacher's knowledge of his subject should keep pace with this exponential growth.
- c) *Development of the teacher as a member of the teaching profession* i.e. a teacher should grow in his pride in the nobility of the teaching profession, in his love and sympathy for his students and in his desire to give his best to the profession through his active participation in conferences and symposia, both in pedagogy and in his own discipline. He should not only do research in his subject, but he should also develop a research attitude in his teaching.

Ideally a teacher must learn something new almost everyday, teach something new almost everyday, teach even old topics in a new way almost everyday and should create some new knowledge almost everyday. For professional development, a teacher should continuously grow in each of the three components.

In the subsequent sections, we shall review some efforts for professional development of teachers made in India and abroad in recent years.

First Efforts in India : Summer Schools for Teachers

The first summer schools in India and USA were organised at the same time, but while in USA these were organised by the National Science Foundation (NSF), in India these were organised by the voluntary efforts of the teaching community.

In the early 50's some of the teachers of mathematics in Delhi University organised a study group which met every Sunday in different colleges in the university and in this way they learnt a number of new branches of mathematics through their own efforts. Their success encouraged them to extend this activity to all India level. A group of four of these teachers organised the first summer school of mathematics in 1958. On behalf of this group, I wrote to all teachers of mathematics all over the country to come to learn new topics and invited professors and research scientists in Delhi to give the lectures. The response was enthusiastic. About 40 teachers from all over the country agreed to come on their own expenses. One of us who was Principal of a college allowed the free use of his hostel and lecture halls, but the participants had to meet their own travel costs and boarding expenses. The resource persons all agreed to give lectures without charging anything from us; in fact they all agreed to meet their own travel costs. We volunteered to meet the contingency expenses including postage, cooling arrangements and cyclostyling expenses ourselves. Later the then Vice-Chancellor of Delhi University, Dr. V.K.R.V. Rao, who came to inaugurate the summer school felt unhappy that the teachers should spend their money and he on his own recommended that the UGC should reimburse the total expenses of Rs. 1600/- we had incurred for a summer school of six weeks.

Dr. Rao was very enthusiastic to find that teachers had organised themselves to work for their own professional development without waiting for any initiative on the part of the university or the UGC. He felt that it was a happy augury for higher education in India and hoped that this voluntary movement will ultimately involve all teachers in all subjects in all universities in India and university campuses will hum with professional development activities during summer months.

We organised six summer schools from 1958 to 1963 in the same ways and the total money spent by the UGC for these six summer schools was about 10,000/- rupees.

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About 200 teachers were trained in this process. Most of them later became professors of mathematics in Indian and foreign universities.

In 1958 itself the National Science Foundation in USA had started summer schools for teachers in mathematics, physics, chemistry and biology and these were highly successful. The U.S. government offered in early 60's to utilise the huge PL-480 funds to help in organising summer schools in science subjects in India and from 1962 onwards a large number of summer schools for both school and college teachers were organised all over the country. In each of these schools, TA and DA was provided to the participants and TA and honoraria were paid to the resource persons. Each school involved an expense of about Rs. 50,000, besides the salary and travelling expenses of two foreign consultants provided to each summer school by the US government, as its help to India. Later the British Council also helped in organising summer schools.

There was tremendous summer school activity for a number of years and large number of teachers were exposed to modern ideas. They helped many boards and universities to modernise their curricula.

We discontinued our series of voluntary summer schools after 1963, because we could not ask the teachers to spend their own money, when government was prepared to meet all the expenses.

However, in this process a large number of non-serious teachers also attended the summer schools. They showed more interest in mess arrangements and sight seeing than in the academic programmes. They either did not learn much or they forgot whatever they learnt very soon. When some of them were later interviewed for promotions, it was found that many of them had forgotten almost everything, if they had learnt something at all. This brought a bad name to the summer school movement. However, even in the case of these teachers, the summer schools had one good effect. These broke down the resistance to change, and syllabi could be modernised more easily. However serious teachers did benefit a great deal and they became the agents of change.

Partly because of unfavourable reports about most schools, partly because of the fact that almost all interested teachers had already attended the schools and partly because of withdrawal of foreign support for these schools, the summer school movement came to a sudden end.

As an example of break down of the resistance to change, I would like to mention the summer schools I organised for Agra and Meerut universities mathematics teachers. When I joined IIT, Kanpur, I formed a Kanpur Mathematical Society, a self-study group of Kanpur college teachers on the same lines as the earlier

Mathematics Seminar, the self-study group of Delhi University college teachers. These teachers themselves took the initiative in organising a summer school for Agra University teachers with financial assistance from UGC, and academic assistance from IIT, Kanpur. The teachers trained in these summer schools later forced the Agra University Board of Studies which consisted of some die-hards to change the curricula. Some of the teachers belonged to colleges which later became a part of the newly established Meerut University. These teachers persuaded their Vice-Chancellor to approach me for help, and I agreed to organise three summer schools for Meerut University mathematics teachers. In all these, the teachers learnt in depth mainly the topics they were teaching or those topics which were freshly introduced into the curriculum. I have mentioned these 10 summer schools in Delhi, Kanpur and Meerut, not because I organised them, but because in all of them the initiative came from the teachers themselves. There was a high degree of motivation of the participants in the university and the UGC only provided some encouragement.

I am convinced on the basis of these experiences, that real professional development of teachers can take place only when teachers themselves take the initiative through their professional subject teacher association (not the present teachers associations which are mostly trade unions) and the UGC only agrees to financially support such initiatives.

The Second UGC Effort : The Faculty Improvement Programme

Though the summer schools were over, the need for faculty development still continued, and the UGC appointed an Advisory Committee to advise it on the best method of improving faculty personnel. I happened to be a member of the Committee which also consisted of six or seven other university professors. I suggested that the programme should consist of training of undergraduate college teachers in

- 1) Implementable pedagogic skills;
- 2) Training in the undergraduate courses in depth;
- 3) Training in history, culture, excitement and relevance of the subject they are teaching;
- 4) Training in some topics which are likely to be taught in undergraduate courses in the next 4 or 5 years or which may be taught as optional courses;
- 5) Training in some practical job-oriented courses related to their subjects; and
- 6) Training in course organisation, development of curricula, formation of professional groups etc.

My colleagues all agreed that these are all useful, but ruled these out on the following grounds :

- a) Few of the university professors are competent to give this training as many are not teaching undergraduate classes and have not given serious thought to pedagogic matters; and
- b) Teachers could be inspired by exposure to research and they could easily guide teachers for their Ph.D. degrees which will also lead to improvement of qualifications and increase of self esteem by the teachers.

The proposal for training teachers for Ph.D was approved. Each teacher was given three years study leave with full pay towards his Ph.D degree. Quite a large number of teachers go their Ph.D degrees in this process, at heavy expenditure to the UGC. A few teachers even misused the grant by registering for a Ph.D degree in their home town and doing practically no research, since in our system there is no course work and only a certificate from the supervisor and reports from two sympathetic examiners are needed. However, many teachers made good use of the opportunity and did serious research work. But, after their Ph.D., they either shifted to university departments or became dissatisfied teachers in their earlier colleges, because there were no facilities for research in their institutions. On the whole, the colleges did not benefit from this expenditure and in fact in some cases they suffered because teacher became dissatisfied and therefore, worse teachers. The university professors who guided them benefitted, individual teachers benefitted, there was some benefit to research, but it was not commensurate with the expenditure involved. The scheme was almost given up after sometime.

The UGC's Third Effort : The Academic Staff Colleges

Arising out of the recommendations of the Mehrotra Committee report and the New Education Policy document, the UGC established 46 Academic Staff Colleges for carrying out

1. Orientation programmes for fresh teachers; and
2. Refresher courses in individual disciplines for more experienced teachers.

There has been no serious evaluation of the impact of these colleges on the university system but the benefits have certainly been commensurate with the modest expenditure per teacher involved.

The evaluation of every course by the participants is usually very favourable, because the participants are exposed to number of eminent educationists and leading subject specialists in a short time and they are naturally impressed.

The Mehrotra Committee had recommended promotion on the basis of satisfactory *performance* in two courses. However later this requirement was watered

down to attending two courses. There was motivation for attending the courses but no motivation for really understanding what was taught in these courses, and as such the impact on classroom instruction could not be measured.

In many refresher courses, the course director chooses the subject of his interest, writes to some of the experts to give advanced lectures on the subject. These experts again talk on their own research interests or on allied topics and try to make them understandable to the participants. Due to the eminence of the professors, the teachers listen to their lectures with all respect, but there is no assessment of how much the teachers follow the lectures. In some cases, no lecture notes are given to teachers to follow up the subject matter.

The success of a refresher course should be measured not by the success of teaching, but by the success of learning. As such the teachers may be requested to sit in a test, not for measuring their individual achievements, but for measuring the success of the course.

Alternatively, each participant may be selected two or three months in advance and given one or two topics on the subject of the course to prepare himself. He may be given all necessary references for preparing the topic. During the course, each teacher participant should speak for one or two hours on his topic in the presence of other teachers and resource persons. This will help them in developing the habit of learning on their own and develop an appreciation for what they have been taught by the resource persons. In fact resource persons should confine themselves to giving deeper insight into the topics which the teachers have prepared. Of course this will mean hard work for both teachers and resource persons, but this will produce results.

Other Efforts at Faculty Improvement

- A) *The Quality Improvement Programme for Engineering College Teachers.* The programme conducted at IITs and Roorkee University for training teachers in modern areas of science and technology has been quite useful.
- B) *The Summer Schools organised by Department of Science & Technology.* The High Energy Physics Group has organised a number of summer or winter schools for research workers. Each time a topic is chosen a year in advance, resource persons are selected and requested to prepare lecture notes in time. The participants are also selected in advance and receive guidance as to what they should read before they come to the school. The lecture notes after being delivered in the schools are updated and published as books.

We require such programmes for all research scholars. The UGC has been concerned with poor

quality of Ph.D theses. Many supervisors who guide research are not equipped to give training in breadth necessary for research. Many universities do not require course work. Under these conditions summer schools for research workers in individual subject disciplines are necessary and the UGC should organise these in a systematic manner.

Efforts in Some Other Countries

I visited eleven Australian universities 20 years ago at the invitation of the Australian Vice-Chancellors' Committee and I found a Higher Education Unit in every university. Each unit organised discussions and seminars on examinations, evaluation, course development, audio-visual teaching aids role in teaching etc. in which teachers themselves participated actively and learnt from one another's experience and from experts.

These units also provided assistance to any teacher who wanted to improve his pedagogic skills. Experts helped him to improve his lesson plans and style of presentation. Sometimes his lectures were recorded on cassettes and later discussed with him by the experts in pedagogy as well as in the subject concerned.

The most important fact about these Units was that they come into being because of the demand of National Student Union in Australia. The Union felt that teachers were neglecting teaching and devoting more time to research which brought them professional recognition and grants. The students insisted that teachers must give more time to teaching and teaching must be given more importance in promotions.

The student reaction surveys were accordingly given serious consideration and so teachers were motivated to improve their teaching. Not only poor teachers but even good teachers sought advice of these Units because in this system a teacher who was excellent in teaching but average in research could also be promoted to a professorship.

These surveys provide a good motivation for improvement of teaching in most Western countries. During my visits abroad, I always meet otherwise distinguished professors who feel miserable because their students rate them low in teaching. Most foreign universities also give Distinguished Teacher Awards and these are highly publicised activities.

In some universities teaching, research and community service are put on an equal basis. For promotion, a person has to be excellent in atleast one of these activities and above average in the other two. An excellent research worker may not be promoted unless he is above average in teaching.

In U.K., the grants received by a university depend on its performance in both teaching and research. Also students tend to go to those universities which have good reputation in teaching. Since students fees make a substantial part of the budget of a university, every university has an inbuilt motivation to keep its teaching standards high and give all encouragement and incentives to good teachers.

Distance Mode in Professional Development

There are more than 250,000 teachers in colleges and universities in India and though they may all be covered in some sense by Academic Staff Colleges over a period of time, the progress will be slow and will not be in sufficient depth.

Since teachers are all mature persons, they can benefit a great deal from open university courses. The open university may offer 4 or 5 courses in history, psychology, philosophy and pedagogy of education and 10 to 20 courses in each individual discipline. A teacher may choose the courses, he may like to study and the teacher may be given incentive for the courses he completes. One advance increment may be given for every four semester level courses completed and for 8 or more courses completed a diploma or a degree may be given.

The advantage will be that teachers may prefer to sit in the examinations of this type rather than in normal examinations.

We have also to remember that higher education can improve only if secondary education improves, and teachers of secondary education can also improve through the open education mode.

The present Academic Staff Colleges can serve as contact centres for the open university courses.

Concluding Remarks

Before we launch any new programme, we should learn from the experiences of our own earlier programmes, and from the experiences of other countries. The cost-benefit analysis of each alternative programme should be done before choosing one or more programmes for adoption.

We have, however, to remember that we shall have good teachers only if the government, the society, the academic community and the students all place a high premium on good teaching. We shall not have good teaching if we only pay lip sympathy to it without the students, teachers and government really wanting it. Let us all search our hearts and see how much we care for good teaching.

The Purpose of Education

Shri Shivraj V. Patil, Speaker, Lok Sabha delivered the Convocation Address at the 11th Annual convocation of the Gulbarga University. He said "Education should make man broad minded and capable of looking into the distant future. It should not make him selfish or narrow minded or parochial or bigoted. An educated man with a selfish heart and narrow minded approach towards life is going to be a more dangerous than an uneducated person. The bloodshed, the hatred that we see in the society today in India and other places, is the result of the half educated persons' approach towards life and his selfishness. Excerpts

It is in these areas, which are dominating the horizon of the world of knowledge and wisdom, the universities have to carry on their activities to keep pace with the present world and to meet the demands of the future.

In the world of science and technology, studies in the fields of Electronics, Genetics, Photonics, Materials and Space are going to be of great importance. Our universities would do well if they would gear up their capabilities to acquire mastery in these fields.

However, in the next century and may be in the centuries thereafter, material sciences and technologies may not be able to solve all the problems of humanity. The problems relating to the minds of human beings are going to be more complicated and difficult to solve. It would, therefore, be wise to pay enough attention to the subjects which are put in the category of humanities also. In fact, as time passes and the space everywhere becomes easily accessible and mixes into the time, the studies about the inner world of human beings would become more important and urgent.

In fact, the approach towards education needs to be synthetic and

holistic. Fragmented approach may not be able to cope with the new challenges and new times. As to how that can be done is going to be a daunting question, not easy to solve; for the time in man's life is going to be short and faculties of understanding and grasping of ordinary man are going to be limited. The real challenge of the education is going to be in this field.

The methods of teaching students followed upto this time may not be able to cope up with the new demands and requirements. They have to be modified and improved upon and should include the new instruments and equipments in the shape of audios and videos, computers and satellites and modern communication systems.

The strength and the capabilities of the universities are going to depend upon their willingness and plans to adopt the new methods of imparting knowledge and wisdom to the students. The sooner the universities apply their attention to these aspects, the better would it be for them.

Education should make man broad minded and capable of looking into the distant future. It should

not make him selfish or narrow minded or parochial or bigoted. An educated man with a selfish heart and narrow minded approach towards life is going to be a more dangerous than an uneducated person. The bloodshed, the hatred that we see in the society today in India and other places, is the result of the half educated persons' approach towards life and his selfishness.

If a person is not capable of behaving with others as he would have others behave with him, he is not really wise and educated. Those who come out of the universities should really have not only universal attitude, but cosmic attitude towards life. Only then, they would belong to the real religion and not to the religion which teaches them hatred and narrow mindedness.

Let us strive and work and pray for the broadening of our minds and comprehensiveness of our attitudes towards life and the entire humanity.

Only then,

We would be able to march
from darkness towards light,
from mortality towards immortality and
from Untruth towards Truth.

We Congratulate.....

Prof. Rasheeduzzafar who has been appointed Vice-Chancellor of the Jamia Hamdard University, New Delhi.

Technology Policy Draft Released

The new technology policy proposes to generate resources for research and development and refinement of critical technologies from the industry based on its annual turnover.

Releasing the draft of the new policy the Minister of State for Science and Technology, Mr P.R. Kumaramangalam, said the proposed policy also aimed at enhancing the R&D investment to 2 percent of the gross national product, evolving an effective mechanism for linkage between industry and laboratory, decentralising the implementation process, involving industry in the upgradation of human skills and doubling the number of career R&D personnel in seven years.

Spelling out the basic thrust of the draft policy, the Minister said, "It aimed at giving a renewed sense of purpose to indigenous technology for its accelerated development and use in the context of the new industrial policy."

The draft policy is likely to be finalised within two months after a national consensus is reached through debates at different levels. The Minister invited the views of the Science and Technology Committee of Parliament, scientific bodies, financial institutions, farmers, organisation, members of Parliament and various user organisation on the draft policy.

According to Mr Kumaramangalam, a set of executive as well as legislative measures will be taken to achieve the goals set forth in the draft policy.

Answering queries on the need for a new policy, he pointed out that the last policy statement announced

in 1983 failed to achieve most of its objectives. The new policy has been designed to further strengthen the pace of liberalising economic reforms, already underway, and help the nation fulfil its role in the new global environment with a renewed sense of confidence and urgency.

According to the draft, the government plans to take innovative steps to attract scientific talents of Indians all over the world to double the number of career research and development personnel within seven years. The base of polytechnics, technical and vocational institutes and engineering institutions would be enlarged with the full participation of industries.

Professionals fully conversant with the latest technologies will be inducted into the ministries and departments which heavily depend on crucial technology inputs.

Thrust areas will also include energy-related technologies, technologies for conservation of land and water, technologies to save people from natural calamities, technologies for better agriculture prospects, biotechnology, electronics, communications, ocean development and software promotion.

Stressing that the target for increasing the research and development expenditure be raised from 0.9 percent of the GNP as at present to 2 percent of the GNP by 2000 AD, the policy document said that the government would provide incentives to stimulate contributions from the industry based on the annual turnover.

All government-funded research and development institutions will be actively encouraged to earn

revenues. They will be allowed to retain these earnings from their services as an additionality to government funding.

Research and development collaborations will be actively encouraged through funding of national laboratories.

Andhra University Convocation

The Vice-President of India, Mr. K.R. Narayanan, delivered the Convocation Address at the 63rd convocation of Andhra University recently. Expressing his concern over the growing phenomenon of brain-drain from the developing countries to developed countries, the Vice-President said that about 640 million dollars worth of educated personnel were being received every year by the developed countries from the developing countries. That is the financial evaluation of the cost of the brain-drain, he added.

Mr. Narayanan suggested that this irreparable loss could be averted if the students developed a desire or feeling of oneness and work for the betterment of the country. He pointed out that the education particularly higher education in this country invariably resulted in alienation between the elite and the masses and brain drain towards developed countries. He said that the education had been widening the gap between the rural and urban people, the rich and the poor, the politicians and the vast illiterate electorate.

The Vice-President gave a clarion call to the students to check the increasing alienation in the country and advised them to work towards the economic and social development of the nation and unity of the country.

Mr. Krishan Kant, the Governor and Chancellor of the University presided over the convocation. He gave away the doctorates, medals and prizes to 11 Ph.Ds and 83 prize winners, 34 gold medalists. Prof. Nemani Krishna Murthy, Prof. M. Krishna Kumari and Prof. M.V. Subba Rao received the Best Research Worker" awards.

In his Convocation address, the Vice-Chancellor of the Andhra University, Dr. M. Gopalakrishna Reddy, proposed a four-pronged strategy to provide placement to the students by starting job-oriented diploma courses for the postgraduate students, making available in each department information cells on employment opportunities, encouraging student-teacher interaction to facilitate proper placement of students, and making the position and performance of students after the completion of their studies as part of each department's annual report. He said that efforts had been initiated to develop the laboratory and library facilities in the campus and postgraduate centres and disclosed that the Human Resources Development Ministry had sanctioned grants to the tune of Rs. One crore for modernisation of laboratories of the departments of electronics, chemical engineering and mechanical engineering, the University Grants Commission had extended the Special Assistance Programmes in the Departments of Physics and Mechanical Engineering. Similar proposals relating to the School of Economics, and the Department of Geology were under consideration. The Department of Economics had been sanctioned a project by the Asian Development Bank and the National Thermal Power Corporation. The Vice-Chancellor said that research projects and schemes in several disciplines had received considerable boost from a number of funding agencies. The UGC had sanctioned

Rs. 17.19 lakhs towards Major Research Projects and the CSIR and other agencies granted Rs. 1.13 crores, he added.

He said that 11 new colleges, of which two were Law Colleges, had been granted affiliation by the University during the year. The review committee constituted by the Board of Management of the University had examined the work done by nine Law Colleges and 10 Education Colleges in the University. While work in seven autonomous colleges affiliated to the University was found satisfactory, a proposal was under consideration to start Master's Course in Computer Applications (MCA) in select colleges.

Dr. Gopalakrishna Reddy announced that the University proposed to award gold medals every year in the names of the founder professors, whose departments have completed 50 years of existence.

Dr. Gopalakrishna Reddy said that the Board of Management, keeping in view the socio-economic needs and developmental goals of the nation, had advised the Boards of Studies to streamline and modernize syllabi.

Magnetic Lab at Pondy Varsity

Prof. S.P. Pandya, Chairman of the Governing Council of the Indian Institute of Geomagnetism, Bombay underscored the need to study science as a holistic discipline.

Declaring open the Rs. 25 lakh magnetic observatory in the Pondicherry Central University at Kalapeth, he said geomagnetism was an ideal subject which had in it the different aspects of science. It began at the core of the earth and pervaded all facets. This enabled full knowledge of the basic sciences.

He stressed the importance of science students having more field study than just posing over books.

Prof. G. Ram Reddy, Chairman of the University Grants Commission, who felicitated the opening of the institute's unit in Pondicherry University, said it was a welcome sign that the two institutions had come together in this venture. What had been stressed all along - that there should be collaboration between the institutes and universities, had been achieved in Pondicherry.

Prof. B. P. Singh, Director of the Institute of Geomagnetism, said the UGC should help the institute and give the subject of geomagnetism an important position. Geomagnetism was an intricate science but it had not picked up as a separate discipline. "We need the support of the UGC and it should be perceived as a significant discipline in view of its all embracing nature."

The magnetic observatory is located in an isolated corner of the University campus. About five acres of land had been leased out by the University to the observatory. It houses sophisticated magnetometers which would monitor continuously the magnetic field to an accuracy of one part in fifty thousand or better. There are nine such centres in the country.

With the institute's observatory at Trivandrum, the additional magnetic station at Kodaikanal, the proposed equatorial geophysical lab in Tirunelveli and the Pondicherry station, optimum latitudinal coverage in the northern part of the dip equator in ensured. No such network exists elsewhere. If collaborative efforts with Sri Lanka are fruitful similar spatial coverage south of the dip equator would also come about.

Orientation Programme of Academic Counsellors

The second phase two days Orientation Programme of the The Indira Gandhi National Open University (IGNOU) Academic Counsellors in the subjects of History, Economics and Commerce was recently organised at IGNOU Regional Centre, Patna. Dr. B.P. Sinha, Retd. Professor of Ancient Indian History and Culture, University of Patna, who inaugurated the programme, felt that as the number of students as well as number of academic institutions had increased the quality of education had gone down. The examination system had been ruined. Almost all reports on education reforms spoke of the problems of numbers and quality. He hoped with the establishment of IGNOU, the problems of numbers and quality of education would be solved. He desired that IGNOU must look towards rural sectors more than the educated elites.

The first day was devoted to the concept of the Distance Education; aims, structures and functions of IGNOU; role of Regional Centres and Study Centres; use of multimedia in Distance Education and Academic Counselling and assessment and evaluation. Dr. S.K. Sharma, the Regional Director(I/C) dealt extensively the above subjects with the help of transparencies. He said of late there has been an emergence of an autonomous learner who is more important than the teacher (all the teaching aids of educational technologies). The students must be exposed to and the choice of picking the best teaching aid should be left to the learner only. The teachers role should be limited to initiation of discussion and he should act as a catalyst only. Dr. Sharma said that with the introduction of mass communication technology in the distance education, the barrier of time and space has collapsed and it has led to hitherto undiscovered areas of teaching/learning

processes. Consequently, the Distance Education System has emerged as a strong alternative system to provide higher education at the door steps of students.

The concluding day was devoted to course specific group discussions. The participants as well as resource persons discussed in detail the course team approach of IGNOU in developing the course materials in the subjects, of History, Economics and Commerce. Prof. S.P. Sinha, Retired Professor in Economics and Ex-pro-Vice-Chancellor, Bihar University, who presided over valedictory function appreciated the role of IGNOU in launching the innovative courses. He specially referred to the subject of Economics and expressed his concern over the deteriorating standard of teaching in Bihar. Prof. Sinha also distributed the certificates of participation in the Orientation Programme.

Around 25 academic counsellors participated in the Programme.

Popular Science Lecture on Blood

The Warangal Regional Centre of A.P. Akademi of Sciences recently organised a popular science lecture on 'Development and Morphology of Blood' by Prof. T. Vasudev, former Vice-Chancellor of Kakatiya University at the C.K.M. Arts & Science College, Warangal.

Prof Vasudev explained the development of blood in the human system right from the moment of conception. 'The blood test alone gives a complete picture about the health condition of a person and that forms the basis for a medical practitioner to treat the patient,' he said. It was a lecture-cum-slide show.

Presiding over the function, Prof. Dinker Sirdeshmukh, President of the Warangal Regional Centre of AP Akademi of Sciences

and Dean, College Development Council of Kakatiya University said that the Regional Centre was planning to take science to the doorsteps of the common man in the rural areas also by organising popular lecture series

Industry and Technical Education

Mr. Veerappa Moily, Chief Minister of Karnataka, called upon the Indian Society for Technical Education (ISTE) to set up a national committee to hold dialogues with the Confederation of Industries and Chamber of Commerce to promote greater interaction between industries and technical institutions.

Inaugurating a national seminar of the 'Role of Industry in Technical Education' at the Centre for Scientific and Industrial Consultancy in Bangalore Mr Moily said that even though the government had taken many steps to bridge the gap between technical institutions and industries effective linkages were yet to be established.

Similarly there was no much headway in the efforts of such bodies as the confederation of Engineering Industries to establish a close relationship, he added.

Mr Moily said that with a view to bridging this gap lecturers and professors of government engineering and polytechnic colleges would be sent to public undertakings from the next academic year for training.

Mr Moily expressed his deep concern over declining standards in technical education.

He also expressed the view that technical disciplines should be introduced in colleges which offered only BA, BCom., and B.Sc courses.

"Disciplines like biotechnology need not be confined to engineering colleges which are beyond the reach of majority of students. Hence these disciplines should be introduced in colleges", he added. Mr Moily also

said it was high time that technical education was made cost effective.

The Chief Minister felt that the syllabi of technical courses should be revised every year to keep pace with the changing technology.

Replying to a plea from ISTE Programme Director Dr P.J. George, Mr Moily assured that a piece of land for setting up a promotional service centre would be provided in Bangalore.

B.E. in Geoinformatics

Anna University's Institute of Remote Sensing (IRS) is launching a Rs. 6-crore German-aided project for expanding its activities over the next three years.

A Bachelor of Engineering course in Geoinformatics is one of the components of the project.

The IRS, a leading remote sensing institute in the country, is planning to bring together agencies such as Metrowater, TWAD Board, TNEB and Telephones, to prepare an elaborate Land Information Management System as a pilot study.

A similar effort will be taken up for a Coastal Zone Information and Management System. These will be funded by the Federal Republic of Germany.

Under the coastal zone segment, the stretches between Madras-Mahabalipuram, and Cuddalore-Pichavaram are to be studied.

The course in geoinformatics with a proposed intake of 15 students, was being started after taking into account the critical shortage of experts in remote sensing and mapping techniques, said Dr M. Anandakrishnan, Vice-Chancellor, Anna University.

Remote sensing using sophisticated techniques enabled computerised "push-button" surveying. Aerial photographs and satellite images were translated into maps and

survey data within a short timeframe, providing accurate information to several user agencies.

Prof. Gottfried Konecny, President, International Society for Photogrammetry and Remote Sensing, said Anna University had signed a Memorandum of Understanding with Hannover University, Germany, for exchange of personnel. The IRS was being recommended as a model for many developing countries, on applications of remote sensing.

Mr. Willi Zimmermann, Senior Planning Officer, German Agency for Technical Cooperation, (GTZ) said his agency was involved in planning implementing and monitoring technical cooperation programmes. At Anna University, a workshop was held between February 15 and 19 on objective-oriented project planning.

Dr. T. Natarajan, IRS Director, said facilities for IRS had been provided under Indo-German bilateral agreement, with aid till 1992 totalling Rs. 8 crores. The current phase of activity was from 1993 to 1995.

Emergence of Plant Biotechnology

Professor S.C. Maheshwari, Department of Plant Molecular Biology, University of Delhi, South Campus, recently delivered a talk on 'Emergence of Plant Biotechnology' at the Department of Botany, Kurukshetra University under its Interdisciplinary Seminars Programmes while dwelling on the history and development of Biotechnology. Professor Maheshwari emphasized on the basic research in our universities. Through beautiful transparencies he explained how the techniques of tissue culture and molecular biology form the foundations of any Biotechnological work. Regenerating the plants from calli by Steward, raising haploids from anthers as achieved in his lab., isolation of protoplasts by Cocking at Nottin-

gham and fusion of protoplasts by George in Germany have been successfully used for improvement of crops, he revealed. The recombinant DNA technology and discovery of Ti-Plasmid of *Agrobacterium tumefaciens* and other techniques of DNA transfer and strategies like antisense-FNA, have made possible getting genetically engineered crops (rice, maize, wheat) variously improved characters like herbicide, insect and disease-resistance, improved quality of grain proteins, removal of toxins from food grains, getting better unsaturated fats suited to the healthy human system, controlled ripening and storage of tomatoes and other fruits etc., he added. Though biotechnology offers great promise and we fully depend on it for better future economy and competitive amenities, he cautioned that other basic research should not be ignored and due recognition and emphasis should be laid on it also.

International Education Commission

Dr. Karan Singh has been named member of the International Commission on Education for the 21st Century. The Commission set up at request of UNESCO, will reflect on the aptitudes, know-how, competence and knowledge that individuals need to carry out their duties and realize their rights.

A mix of historians, ministers, writers, educators, and sociologists among others from fourteen countries round the world constitute the fourteen members of the Commission. It will be chaired by Jacques Delors, President of the Commission of European Communities. Other members include Mr Carlos Fuentes, Mexican writer and University Professor and the Rt Hon Michael Manley, university lecturer, author and former Prime Minister of Jamaica.

In view of the importance and range of its mandate, the Commission will be aided in specific aspects of its work by an international group

of distinguished advisors known for their successful work in the area of educational policy, Ms Gro Harlem Brundtland, Prime Minister of Norway, Sir Yehudi Menuhin, British violonist, David Suzuki, Canadian scientist and science populariser and winner of the 1986 Kalinga Prize and Sheikh Saki Yamni, former Saudi Arabian minister of Petroleum and Natural Resources are among those who will constitute this group. The Commission will present its report at the beginning of 1995.

Science City in Calcutta

A science city, educating people to live scientifically and in harmony with the nature, will be established in the city during the current plan period, according to Prof Sankar Sen West Bengal Science and Technology Minister.

Inaugurating a seminar on "Calcutta today and tomorrow," organised by the Bharat Chamber of Commerce, Prof Sen, who is also the Power Minister, said the proposed city would be set up in collaboration with the Calcutta Municipal Corporation.

The Centre, he said had sectioned Rs 60 crore for the purpose while the Municipal Corporation had given 50 acres for the proposed city which would have museums and models showing avenues of a care-free living, besides checking the growing degradation of the metropolis' environment.

He also stressed the need for initiating an action plan to provide succour to city dwellers from environmental degradation and said the chambers and business community had a bigger role to make the city habitable.

IGNOU ties up with NIRD

Prof. V.C. Kulandaiswamy, Vice-Chancellor, Indira Gandhi National Open University signed a memorandum of understanding with the National Institute of Rural

Development in Hyderabad recently. The memorandum provides for collaborative and complementary efforts between NIRD and IGNOU. It covers the use of study material and involvement of faculty members in updating course material. The Director General of NIRD, Mr. T.C.A. Srinivasaramanujan was also present on the occasion.

Journalism School Opened

The School of Journalism and Communication sponsored by the National Union of Journalists (India), was inaugurated recently in New Delhi by Mr. H.K. Dua, Editor of Hindustan Times.

Speaking on the occasion, Mr. Dua said that while the press in India had taken care of its freedom, efforts were needed to take care of professional standards. Unless the press maintained professional standards, the society might not help in protecting the freedom of press. He hoped that the School of Journalism would go a long way in enhancing professional standards of journalists.

Mr. Prithvis Chakravarti, Chairman of the School, said the institution was started to provide training facilities for the entrants and the upgradation of those already in the field.

UNIVERSITY NEWS

Form IV (See Rule 8)

- | | | | |
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I, Sutinder Singh, hereby declare that the particulars given above are true to the best of my knowledge and belief.

Sd/-
Publisher

Agricultural Human Resource Development

To develop effective training and extension system in Haryana and also to strengthen the teaching and research facilities in the emerging areas, the World Bank will finance the state suitably under its ambitious project entitled "Agricultural Human Resource Development". This consensus emerged out of the two days Workshop held at Chandigarh on Feb. 20 and 21 under the Chairmanship of the Vice-Chancellor, Dr. A.L. Chaudhry. During this workshop, the World Bank consultants : Drs R. Hunink, Van Reenen, Darvesh Kishore and Jagdish Kalla held detailed discussions with the Vice-Chancellor, Dr. A.L. Chaudhry and senior officers of the university, state Departments of Agriculture, Horticulture, Animal Husbandry and Fishery. On this occasion, the details of the project were finalised in consultation with officials of the government and non-governmental organisations.

The workshop also recommended strengthening of inter-institutional linkages. In his remarks, Dr. Chaudhry pointed out that agricultural development in Haryana had reached a plateau and to achieve further progress the area of human resources and institutional management had to be taken care of. Dr. Chaudhry hoped that under this project the state will be able to further achieve a breakthrough in its agricultural production.

Shri M.K. Miglani, IAS, Commissioner and Secretary, Department of Agriculture, Haryana inaugurated the workshop.

Sanchar Bhavan at Raipur

Kunwar Mehmood Ali Khan, the Governor of Madhya Pradesh and the Chancellor of the Indira Gandhi Krishi

Vishwavidyalaya, Raipur inaugurated the Sanchar Bhavan (Communication Centre) of Indira Gandhi Krishi Vishwavidyalaya Raipur (M.P.) recently. Speaking on the occasion the Governor called upon the scientists, teachers and students of the university to work on the fields along with the farmers and convince them about the usefulness of the latest technology. The university must extend needed information at the opportune time to the farmers. He said that the need of the hour was to bring the farmers into the mainstream of the country by solving their problems with available resources and supplying them latest information. He hoped that the Sanchar Bhavan will do this job and the farmers of the region will be benefitted.

Earlier Dr. Kirti Singh, Vice-Chancellor of Indira Gandhi Krishi

Vishwavidyalaya welcomed Kunwar Mehmood Ali Khan and his wife, Mrs. Bilkis Begum. Dr. Singh said that within a small duration of 5 years Indira Gandhi Krishi Vishwavidyalaya had achieved many goals such as establishing Dairy Technology College, Veterinary & Animal Husbandry College etc.

Lessons from Thailand

Dr. C. Ramasamy, Professor of Agricultural Economics delivered the Campus seminar on "Thailand Revisited - Lessons from one of the Asian Tigers" recently at the Centre for Agriculture and Rural Development Studies, Tamil Nadu Agricultural University (TNAU), Coimbatore.

Presenting the research results of the International Project on Rice Research by Rockefeller Foundation, Dr. Ramasamy outlined the priority areas of rice research based on project findings. 'The bio-safety' aspect of biotechnological researches should be given due attention", he underlined.

VIDYA VIKAS MANDAL'S GOVIND RAMNATH KARE COLLEGE OF LAW P.B. No. 777, Margao-Goa - 403 601 (Affiliated to Goa University)

Applications are invited for the post of

PART TIME SPORTS DIRECTOR

QUALIFICATIONS	:	As laid down by UGC & Goa University
SCALE OF PAY	:	As prescribed by Goa University & Director of Education, Goa State.

Applications with full bio-data accompanied by copies of certificates and statement of marks from S.S.C. onwards must reach the Principal within 15 days from the date of publication of this advertisement.

Candidates who are already employed shall send their applications through proper channel. Break in service if any should be accounted for.

PRINCIPAL

Detailing the socio-cultural aspects of Thailand Dr. Ramasamy compared the similarities on "cultural Dimension" between our country and Thailand. The phenomenal average growth of non-agricultural sectors in Thailand was explained by him with the help of time-line data-base and analysis.

On the agricultural export front, he emphasised the scope for fruits and vegetables.

Dr. R. Vijayaraghavan, Deputy Director of Planning and Monitoring, TNAU presided over the Seminar and stressed the need for understanding the economic profiles of countries at global level and international marketing. Presenting the basic data on land, people and natural resources of Thailand, Dr. Vijayaraghavan wanted the young scientists to study closely on these resources base at the international level.

Future Trends and Challenges in Engineering Education

The Association of Engineering Education in South East Asia and the Pacific (AEESEAP) has convened an International Conference on Engineering Education on 10-12 November 1993 at Singapore. This conference is co-sponsored by the Federation of Engineering Institutions in SEA and the Pacific (FEISEAP), and the International Association for Continuing Engineering Education (IACEE). The conference will be organised by the Faculty of Engineering, National University of Singapore.

The conference theme, "Future Trends and Challenges in Engineering Education", reflects on the effect of the rapidly changing nature of technological development on engineering education. It provides a forum for discussion and sharing of experience on various facets of curriculum development, and on teaching-learning and training strategies to meet the challenges of rapidly advancing technology.

Topics suggested for discussion include Curriculum development *Teaching and assessment strategies *Computer aided teaching/education *Quality assurance in education *Creativity in education *Continuing education for engineers *University- Industry partnership *Training of engineers for industry *Challenges of new technologies *Management of technology *Educational psychology *Role of women in engineering *Project based learning.

Further details can be had from :

Intl Conference on Engineering Education '93
c/o Applied Research Corporation
Engineering E4-04-11
National University of Singapore
Kent Ridge Crescent
Singapore 0511

News from Abroad

Philippe Laudat Conferences 1993

Organised with the support services provided by National Institute for Health and Medical Research (INSERM), the Philippe Laudat Conferences are intended to promote high level medical scientific exchanges throughout Europe and the world in basic and specialized clinical fields such as biomedical and health research. Original programmes and new approaches are encouraged.

The conferences programmed for 1993 are as follows :

Hemopoiesis and early T cell Differentiation -September 5-9, 1993. Themes proposed for discussion are *Hemopoiesis in the bone marrow : role of environmental factors (adhesion molecules, growth factors, stromal cells)

*Purification and characterization of human and mouse stem cells *Early T cell differentiation : in vitro/in vivo differentiation of early T cell precursors. Role of the different stromal elements within the thymus

*Gene regulation during early lymphopoiesis : the question of commitment *Embryonic stem cells : differentiation towards T cells.

Molecular Aspects of Neuronal Transporters - September 26-30,

1993. Topics proposed to be discussed are *The plasma membrane transporter families *Molecular characterization of the plasma membrane transporters *From transporters to higher brain functions *Function, regulation and localization of transporters *Biochemistry and molecular biology of the vesicular transporters.

Glutamate Receptors : From Genes to Pathology - October 3-7, 1993. Themes proposed to be taken up for discussion include *Diversity of glutamate receptors and their structure *Allosteric regulatory sites on glutamate receptors; targets for new therapeutical agents *Nitric oxide (NO), cyclic AMP and Ca^{++} as intra -and intercellular messengers for glutamate receptor actions *Molecular mechanisms of neuronal cell death induced by glutamate.

Scientists wishing to attend to the conferences can obtain informations and application forms at the following address : Conferences Philippe Laudat Bureau des Colloques et des Conferences Department de l'information et de la communication 101, rue de Tolbiac - 75654 Paris cedex 13 - France.

Last date for registrations is May 1st, 1993.

Flawed but Useful

Surinder Chawla*

A B Kohli. *Government of India: Nehru to Narasimha Rao*.
New Delhi, Reliance Publishing House, 1993. Pp. ix, 219. Rs. 250/-

Government of India - Nehru to Narsimha Rao has been divided into two parts. The first part of the book lists the members of the Union Cabinet since the time of first government at the centre in 1947 to the Narsimha Rao Government in 1991-1992. The second part of the book deals with the biographical sketches of Prime Ministers of India.

There is very little one can comment on the factual data provided in the first part of the book but for a random check of the names given in the lists of Council of Ministers of the Union Cabinet. Such a check indicates that the compilation of yearwise account of members of the Council of Ministers in the present book has a fair degree of accuracy. However, there is lack of consistency in the style of presentation. One is intrigued by the suffixes 'FN' and 'AN' after certain names and dates (p. 48, 49) while these abbreviations are missing in other entries. Infact, FN and AN meaning forenoon and afternoon have hardly any significance in a compilation of this kind. Again subheadings are sometimes given in bold letters (p 8), sometimes in italics (p57) while at the other places they are in bold italics(p37). The dates are sometimes mentioned in brackets and sometimes without brackets. This not only irritates the reader but also obstructs the search.

The book also does not follow any pattern of listing of various ministries, or ministers and lists of Council of Ministers of the government have been given randomly. Perhaps it would have been better, if the author had taken little more pains to serialize the listing in an alphabetical or some such order as would have helped the reader to easily locate what he desires to search. It would have been very useful if the author had given in part I the important ministries and the ministers with dates that they held office under that particular ministry as he has done in the annexures for Presidents, Vice Presidents etc. Part I of the book also contains short chapters on the transfer of power on August 15, 1947 and position of different political parties at that time in Parliament and gives information on the powers of the Governor General. The constitution of Union Government between 15th Aug, 1947 to the declaration of Republic of India has been provided with a historical touch in another short chapter while a brief account of the first general election has been provided in part I of the book. The discussions presented in these chapters of part I are useful. These supposedly give an account of actual happenings and have been given with a flavour of a novelist rather than that of a historian or a bibliographer. It would have been better if the author had given the factual data about election officers, election procedures, the number of votes polled etc. or the political party positions at the time of each election or the num-

ber of members of parliament etc. which would have increased the utility of the book. At places the author has also discussed the Constitutional Amendments (p11) but such discussions offer only a surface level treatment of the subject. The mention of only 42nd Amendment of the Constitution is welcome as this particular amendment sought to tinker with the basic fabric of the Constitution. However, it leaves one guessing whether the other amendments were or are unimportant.

In the second part of the book, the author presents biographical sketches of the present and past Prime Ministers and it is this part which leaves much to be desired of the author. One is irked by the fact that many trivial things have been discussed at length while important biographic details have been left out. A rapid reading of these chapters in this section gives one the feeling that the author is an ardent admirer of all the Prime Ministers and this section appears more as a eulogy than presentation of biographies. The sketches shower praise on personalities being discussed to such a level that raises the officials discussed to the level of demigods. Comments like 'he is an honest, clean and above all is not a manipulator'. 'He is not only scholarly and studious but also has a keen sense to distinguish between right and wrong'.... (p. 201) speaks enough about the fact that his comments are subjective and are only buttering the people who matter. Even the friends of the person under discussion may not be overjoyed to see such eulogies and objective analysis of the personalities concerned is missing. All the biographic sketches given in the book have a lop-sided presentation. For example 'he held the office of Prime Ministership for 11 months, lost the motion of confidence after heated debate that lasted 11 hours

*Asstt Librarian, Association of
Indian Universities, AIU House,
16 Kolla Marg, New Delhi - 110 002

in the 11th month of the year. This happened second time in the Parliamentary history of India after an interval of 11 years..... and incidentally 1100 gallery passes were issued to visitors to witness this briefest and historic session of the Lok Sabha....' Passages such as these refer to the author's belief in numerology and maybe superstitions also.

The author seems to enjoy dramatization of events which should be restrained in a compilation of the type author is trying to project for his work. This section lacks coherence, objectivity and historian's touch in giving facts and figures. What a particular leader said on the death of a Prime Minister does not form a portion of a biographical sketch unless it has some rationale and in this context, the overall presentation of this section in the book should be con-

sidered a failure. Again some of the life sketches include the number and titles of the books authored or edited by Prime Ministers while for others, this list is missing. While discussing a particular Prime Minister's life, the author sometimes talks of names, professions, qualifications of parents and off springs, topics or subject taken during his educational career whereas in other cases such details are missing and other factors have been discussed at length. There is no uniformity in the presentation of the subject matter throughout the book and no coherence has been maintained in the text. The jacket describes of the book with the words 'All the directories published over the years put together will not answer the queries, which this reference tool will do singly' is simply an over statement which is not jus-

tified, particularly when the book and the author leaves much to be desired.

The book contains a very useful and exhaustive name index and annexures which help to know about a particular minister at a glance. The cost of Rs. 250/- for a 219 page book of this type seems to be on the higher side particularly when these books serve a limited purpose these days as the Union Ministries are changing so fast. In fact by the time this book came in the reviewers' hands, the Union Cabinet had already been reshuffled. Despite these shortcomings the author must be given the credit formaking available a reference source of value to those who are looking for 'Who was who and when' if not for those looking for 'who is who and where'. The book will prove to be a welcome addition to the reference works of any library.

CALENDAR OF EVENTS

Proposed Date of the Event	Title	Objective	Name of the Organising Department	Name of the Organising Secretary/ Officer to be contacted
May 25-27, 1993	Sixth Annual Conference of the All India Association for Educational Research	Theme: Research in Educational Management	All India Association for Educational Research in collaboration with St. Ann's College of Edu- cation, Mangalore	Dr (Sister) Lydia Fernandes A.C., Principal, St. Ann's College of Education, Managalore
1st Week of June, 1993	Annual Conference of Indian Academy for Instructional Planning	Theme : Instructional Planning – an educational rethinking	Pravara Rural College of Education, Pravaranagar, Dist. Ahmednagar	Dr. P.L. Kirkire Secretary, IAIP, BEd. College Loni (Pravaranagar) Dist Ahmednagar-413712
December 14-16, 1993	1993 Annual Conference of the Society for Research into Higher Education	Theme: Governments and the Higher Education Curriculum: Evolving Partnerships	Society for Research into Higher Education, London	Prof. Tony Becher, FIDB, University of Sussex, Falmer, Brighton BN 1 9RG

RESEARCH IN PROGRESS

A list of research scholars registered for doctoral degrees in Indian Universities

SOCIAL SCIENCES

Psychology

1. Flint, George J. **Psychological adjustment of military personnel.** Kerala. Dr S Jayakumari, Reader, Department of Psychology, University of Kerala, Kariavattom.

Political Science

1. Kashyap, Sneha. **The role of military in politics: A case study of Burma, Myanmar.** HP. Dr Rajinder Singh Chauhan, Department of Political Science, Himachal Pradesh University, Shimla.
2. Mehta, Ritu. **State, Constitutions and political power in the erstwhile Soviet Union: A conceptual study on the collapse of the USSR.** HP. Dr Javed Alam, Department of Political Science, Himachal Pradesh University, Shimla.
3. Pavagi, Varsha. **Bharat Sri Lanka sambandh, 1987 ke samjhaute ke vishesh sandarbh mein.** H S Gour. Dr S S Sodhi.
4. Sharma, Sushma. **Ethnicity and nation building: A case study of Sindh in Pakistan.** HP. Dr Rajinder Singh Chauhan, Department of Political Science, Himachal Pradesh University, Shimla.
5. Upadhyay, Pradip Kumar. **Bhartiya rajniti tatha rajnitik dal, 1969 se 1990 tak.** Vikram. Dr (Smt) Sandhya Billore, Prof, Department of Political Science, Govt Girls College, Ujjain.

Economics

1. Janardanan Pillai, B. **Economics of milk production.** Kerala. Dr G Karunakaran Pillai, Reader, Department of Economics, University of Kerala, Kariavattom.
2. Narayanan, K. **Economics of alternative technologies in house construction.** Kerala. Dr C Radhakrishnan Nair, Reader, Department of Economics, University of Kerala, Kariavattom.
3. Thakur, Vandana. **'Sagar Sambhag ke pramukh krishi samasyayen: Ek mulyankan.** H S Gour. Dr K C Jain.

Public Administration

1. Bhupinder Kumar. **Accountability of higher civil servants in Himachal Pradesh: A study in relationship between bureaucrats and ministers at state level.** HP. Dr Padam Nabh Gautam, Department of Public Administration, Himachal Pradesh University, Shimla.
2. Goel, Simmi. **Administration of job satisfaction mechanism among employees in selected public sector undertakings of Himachal Pradesh.** HP. Dr Shiv Raj Singh, Department of Public Administration, Himachal Pradesh University, Shimla.
3. Narinder Kumar. **Bureaucracy and development: A comparative study of three districts in States of Punjab, Haryana, Ambala and Himachal Pradesh, Solan.** HP. Dr R D Sharma, Department of Public Administration, Himachal Pradesh University, Shimla.
4. Sen, Kalpna. **Relationship between politicians and administrators at district level in Himachal Pradesh with special reference to Shimla and Mandi Districts.** HP. Dr Shiv Raj Singh, Department of Public Administration, Himachal Pradesh University, Shimla.

Education

1. Sobha, V K. **Educational needs of intellectually superior students at plus two stage and the strategies adopted by teachers in meeting the needs.** Kerala. Dr Mercy Abraham, Prof, Department of Education, University of Kerala, Thycad, Thiruvananthapuram.

Commerce

1. Balachandran Nair, K K. **A study of the impact of trade union movement in Kerala.** Kerala. Dr K P Muraleedharan, Lecturer, Department of Commerce, University of Kerala, Thiruvananthapuram.
2. Gupta, Arvind Kumar. **Trends and prospects of agricultural and processed food export from India.** Panjab. Dr Satish Kumar Kapoor, Reader, Department of Commerce and Business Management, Panjab University, Chandigarh.
3. Kareem, A A. **House hold savings and investments in Kerala: An empirical study.** Kerala. Dr M Sarangadhasan, Reader, Department of Commerce, University of Kerala, Thiruvananthapuram.

4. Mehta, Lalit Kumar. **Software exports from India.** Panjab. Dr Satish Kumar Kapoor, Reader, Department of Commerce and Business Management, Panjab University, Chandigarh.

5. Nayyar, Sushil. **Human resource development in State Bank of India.** HP. Dr Rajinder Sharma, Department of Commerce, Himachal Pradesh University, Shimla.

6. Sopan, Nikam Ramhari. **A study of managing cost and productivity of co-operative sugar industry in Solapur District.** Shivaji. Dr B B Ekshinge, Onkar Prasad, Gandhinagar, Naikwadi Plot, Barshi.

Home Science

1. Girija Devi, P K. **A study of familial problems of elderly women.** Kerala. Dr S Kamini, Prof, Department of Home Science, College for Women, Thiruvananthapuram.
2. Mathew, Susan J. **Attitude of adolescents towards the academic expectations of parents.** Kerala. Dr S Kamini, Prof, Department of Home Science, College for Women, Thiruvananthapuram.
3. Radhika, R. **Anganwadi as a focal point in integrated child development service: An evaluation.** Kerala. Dr S Kamini, Prof, Department of Home Science, College for Women, Thiruvananthapuram.
4. Rishi, Priti. **Mapping RDA for energy for Indian sportswomen.** Delhi. Dr Anupa Siddhu, Lecturer, Department of Food and Nutrition, Lady Irwin College, New Delhi.
5. Thampi, P Resmi. **Mahila samajams - their role in empowerment of women.** Kerala. Dr S Kamini, Prof, Department of Home Science, College for Women, Thiruvananthapuram.
6. Varghese, Elizabeth. **Women employment: Impact on the family.** Kerala. Dr S Kamini, Prof, Department of Home Science, College for Women, Thiruvananthapuram.

Management

1. Benepal, Suveera. **Formulation of a strategy applying quantifiable financial indicators for long term stock market portfolio investment.** Panjab. Dr S C Vaidya, Reader, Department of Commerce and Business Management, Panjab University Chandigarh.
2. Bhatia, Harcharan Singh. **Management of telecommunication projects in changing environment.** Panjab. Prof S P Singh, Department of Commerce and Business Management, Panjab University, Chandigarh.
3. Diwan, Parag. **Analysis and design of computer integrated manufacturing system for semiconductor industry.** Panjab. Prof Bidhi Chand, Department of Commerce and Business Management, Panjab University, Chandigarh and R P Gupta, Reader, Department of Commerce and Business Management, Panjab University, Chandigarh.
4. Dube, Upma. **Management of drinking water distribution in Sagar Division: A comparative study of Sagar and Damoh District.** H S Gour. Dr Y S Thakur.
5. Gupta, Manju. **Personal management of women employees in selected industries of M P.** H S Gour. Dr Y S Thakur.
6. John, Johnson. **Financial management of tyre industry in Kerala.** Kerala. Dr R Gangadharan Nair, Reader, Institute of Correspondence Courses, University of Kerala, Kariavattom.
7. Kashmiri Lal. **Physical distribution system of vanaspathi: A study of selected companies.** Panjab. Prof Bidhi Chand, Department of Commerce and Business Management, Panjab University, Chandigarh and Dr Satish Kapoor, Reader, Department of Commerce and Business Management, Panjab University, Chandigarh.
8. Khushdip Kaur. **Performance appraisal of employees in selected banking organizations and insurance companies of Chandigarh.** Panjab. Dr P P Arya, Reader, Department of Commerce and Business Management, Panjab University, Chandigarh.
9. Mahan, Shashi Bhushan. **Indian sugar industry in global context: A strategic analysis for project planning.** Panjab. Prof S P Singh, Department of Commerce and Business Management, Panjab University, Chandigarh.
10. Mukesh Kumar. **Performance evaluation of Indian mutual funds.** Panjab. Prof B B Tandon, Department of Commerce and Business Management, Panjab University, Chandigarh and Dr Yash Pal, Lecturer, Department of Commerce and Business Management, Panjab University, Chandigarh.
11. Param Jit Kaur. **Cost of capital: An empirical study of selected companies.** Panjab. Dr C Prabhakara Babu, Reader, Department of Commerce and Business Management, Panjab University, Chandigarh.
12. Sharma, Anil Kumar. **Study of financial management of State Housing Board in Northern Region of India.** Panjab. Dr S C Vaidya, Reader, Department of Commerce and Business Management, Panjab University, Chandigarh.
13. Sharma, Aradhana. **Capital budgeting procedures and application of models in Indian industry: An empirical study of selected companies.** Panjab. Dr C Prabhakara Babu, Reader, Department of Commerce and Business Management, Panjab University, Chandigarh.
14. Shiva. **Comparative performance of public sector Tourism Corporations of Panjab, Haryana, Himachal Pradesh and U T of Chandigarh.** Panjab. Prof Bidhi Chand, Department of Commerce and Business Management, Panjab University, Chandigarh.

Fine Arts

Music

1. Ritu Kumari. **Sitar, iske anibadh tatha nibadh swaroop: Vibbhinngaharon keevadan vidhi ke pariprekshya mein.** HP. Dr I Chakravarti, Department of Performing Arts, Himachal Pradesh University, Shimla.

Dance

1. Kashyap, Vidya. **Nati, Himachal Pradesh tatha Bastar, Madhya Pradesh ke lok nrityon ka tulnatmak vishleshan.** HP. Dr I Chakravati, Department of Performing Arts, Himachal Pradesh University, Shimla.

Language & Literature

English

1. Chouhan, Rashmi. **Humour in the poetry of Eliot, Auden and Pound.** H S Gour. Dr (Mrs) S Sengupta.
2. Farook, CT. **The sociolinguistic factors relevant to the teaching of English to the students of vocational higher secondary courses in Kerala.** Kerala. Dr Maya Dutt, Lecturer, Institute of English, University of Kerala, Thiruvananthapuram.
3. Gour, Udai Bhan Singh. **Existentialism in the novels of Shashi Deshpande.** H S Gour. Dr A K Awasthi.
4. Joseph, Abraham. **Cross cultural conflicts in the plays of George Ryga.** Kerala. Dr A Jameela Beegum, Reader, Institute of English, University of Kerala, Thiruvananthapuram.
5. Kamala, R. **The novels of John Wain as comedies of discontent.** Kerala. Shri S V Iyer, Reader, Institute of English, University of Kerala, Thiruvananthapuram.
6. Sammuel, VT. **Theological gestalt in the novels of Graham Greene and Brian Moore.** Kerala. Dr Maya Dutt, Lecturer, Institute of English, University of Kerala, Thiruvananthapuram.
7. Sharma, Vinita. **Ivory in Jane Austin and Ruth Praver Jhabvala: A cross culture study.** H S Gour. Mrs Sengupta.
8. Shereef Rehuman, A. **Self reflexivity in the works of Nissim Esakiel and Michael Ondatje.** Kerala. Dr A Jameela Beegum, Reader, Institute of English, University of Kerala, Thiruvananthapuram.
9. Sreelatha, S. **Madness in the novels of Doris Lessing: A dark descent into the interior, a threshold to new consciousness.** Kerala. Dr V Rajakrishnan, Reader, Institute of English, University of Kerala, Thiruvananthapuram.
10. Valsa, Koshi Elizabeth. **Feminist perspectives and existential peril in Ellen Glasgow's Virginia Barren Ground and the romantic comedians and Toni Morrison's the Bluest eye, Sula and Song of Solomen.** Kerala. Dr K Radha, Prof, Institute of English, University of Kerala, Thiruvananthapuram.
11. Verma, Madhu. **An examination of non-fiction writings in America.** H S Gour. Dr (Smt) S Sivaraman.
12. Vijayamohanan, J. **Lyrical voices and social vision in the poetry of Dorothy Livesay and Judith Wright.** Kerala. Dr Maya Dutt, Lecturer, Institute of English, University of Kerala, Thiruvananthapuram.

Malayalam

1. Sunilkumar, R. **Rashtriyavabodham andhunika Malayala kavithayil.** Kerala. Dr N Mukundan, Lecturer, Department of Malayalam, University of Kerala, Kariavattom.

THESES OF THE MONTH

A list of doctoral degrees accepted by Indian Universities.

SOCIAL SCIENCES

Library & Information Science

1. Dixit, R P. Information management in health science libraries in India with special reference to Delhi. Rajasthan. Dr (Mrs) P Dhyani, Assoc Prof, 4-Ja-3, Jawahar Nagar, Jaipur.
2. Shrivastava, Rochana. Reading habits and literature use by botanists. Jiwaji. Prof B Guha.
3. Singh, Sonal. The development of university libraries in Uttar Pradesh after independence. Vikram. Prof S S Aggarwal, Head, Depttment of Library Science, Vikram University, Ujjain.

Psychology

1. Das, Indira. A study of the nature of drug, cognizance, personality profile and value modes of higher secondary school students of Calcutta. Calcutta.
2. Konar, Ajay Kumar. A study of the effect of demographic factors on the performance of the candidates on different ability and aptitude tests in the clerical selection examination for recruitment of banks. Calcutta.
3. Madhavan, Manju. Factors affecting human resources development in Government organisations. Bangalore. Dr (Mrs) Vinoda N Murthy, Prof, Department of Psychology, Bangalore University, Bangalore.
4. Raghuram, Ahalya. Attitudes towards mental illness: A comparative study. Bangalore. Dr G G Prabhu, Prof and Head, Department of Clinical Psychology, National Institute of Mental Health and Neuro-Sciences, Bangalore.
5. Thakur, Alpna. Takniki evam gair takniki sainik ad-hikariyon mein jikhimpurnavyavahar ka mansik sajgata evam vyaktitva sheel gunon per prabhav ka adhyayan. Durgawati.
6. Venkatesh Reddy, A N. The impact of deprivation awareness on some dimensions of self. Gulbarga. Dr B Krishna Murthy, Department of Psychology, Gulbarga University, Gulbarga.

Sociology

1. Aglawe, Pradeep Nagorao. Dr B R Ambedkar as a social thinker. Nagpur. Dr M R Deshmukh.
2. Chauhan, Sadhana. Bal sudhar sansthayon ke antah vasi bal apradhiyon ke samajik arthik prishthabhumi: Chambal Sambhag ke sandarbh mein ek samajshastriya adhyayan. Jiwaji. Dr Laxmi Tomar, Department of Sociology, Maharaja Mansingh College, Gwalior.
3. Jain, Nisha. Mahila mukhiya parivar ka samajshastriya adhyayan: Indore Nagar ke sandarbh mein. Devi Ahilya. Dr T R Seth, 61, Pagnis Paga, Mein Road, Indore.
4. Kothia, Namrta. Brihttar Gwalior ke nivasiyon ke samajik jeevan per doordarshan ka parbhav. Jiwaji. Dr (Smt) Usha Govila, Principal, Govt Naveen Girls College, Gwalior.
5. Mehar, Kiran. Kosa udyog ke bunkaron per samajik, sanskritik parbhav: Raigarh Jile ka ek samajshastriya adhyayan. Ghasidas. Miss Shuchi Jha, Govt Kanya Postgraduate College, Bilaspur.
6. Naji, Yahya Baqer. Academic performance of foreign students in relation to their social adjustment in India. AMU. Prof Noor Mohd Sulaiman.
7. Nataraj, H M. Socio-economic problems of Lambani Tribe of Karnataka. Jiwaji. Dr P V G Tomar, Prof and Head, Department of Sociology, MLB Arts and Commerce College, Gwalior.
8. Nayak, Saraswati. Pall sharmikon ka parivarik samanjan: Bhilai Ispat Sanyantra ke sandarbh mein karyakari anusandhan abhikalpa. Ghasidas. Dr D S Bachela, Prof, Department of Sociology, Govt T R S College, Rewa.
9. Pauranik, Sanjay. Brihttar Gwalior mein Karamchari Rajya Bima Yojna ke antragat labharthiyon dwara parivar kalyan

sewayon ke upyog ka ek samajshastriya adhyayan. Jiwaji. Dr (Smt) Usha Govila, Principal, Govt Naveen Girls College, Gwalior.

10. Pratap Singh. Rising tendencies of drug addiction among Chamoli District: A sociological study. Garhwal. Dr Jai Singh.
11. Punalekar, Devyani Sitaram. Urbanization and social change: A case study of a fringe village. Patel. Prof A S Patel.
12. Rai, Brijbala. Brihttar Gwalior ke vidhvayon ke samajik sthiti evam bhumika: Ek samajshastriya adhyayan. Jiwaji. Dr M P Shrivastava, Prof and Head, Department of Sociology, Jiwaji University, Gwalior.
13. Saxena, Ramesh Chander. Drug abuse among students in Jaipur City with particular area of Rajasthan University and Constituent Colleges students. Bundelkhand. Dr (Smt) Gargi, Principal, Arya Kanya Degree College, Jhansi.
14. Sengar, Sunita. Mahabharatkaleen samaj mein parivar vyavastha: Ek samajshastriya adhyayan. Jiwaji. Dr R M Saxena, Department of Sociology, Govt Degree College, Balaji Mihona.
15. Sharma, Subhash Kumar. A socio-economic study of Saharia Tribe in Morena District, Madhya Pradesh. Jiwaji. Dr S S Bhaduria, Department of Sociology, Govt B S College, Gwalior.
16. Shrivastava, Ramkrishna. Parivar niyojan ke kriyanvayan mein grameen janata ke sebhagita: Shivpuri Jile ke sandarbh mein ek samajshastriya adhyayan. Jiwaji. Dr R S Bhaduria, Department of Sociology, Govt P G College, Shivpuri.
17. Vyas, Shraddha. Kalidas ke mahakavya mein chitrit nari ka samajshastriya adhyayan. Vikram. Dr P N Khare, 7 Bakshi Colony, Indore.

Social Anthropology

1. Medhi, Bandita. The potters and pottery of Nalbari District, Assam: A study in ethno-history and ethno-archaeology. Gauhati. Dr H C Sharma, Reader, Department of Anthropology, Gauhati University, Guwahati.

Social Work

1. Kavitha, M A. Psycho-social correlates of SC students: A study of mental health and adjustment problems. Bangalore. Dr U A Shriif, Department of Psychiatric Social Work, National Institute of Mental Health and Neuro Sciences, Bangalore.
2. Mathew, Minnie. Nutrition and health education among tribal adolescent girls with special reference to the role of the ICDS. Jamia. Prof M Z Khan, Department of Social Work, Jamia Millia Islamia, New Delhi.
3. Sankar Rao, Allu Gouri. Mental morbidity among university students: A study. Andhra.

Political Science

1. Afzal, Nuzhat. Pandit Jawaharlal Nehru ke rajnitik chintan ka vikas. Barkatullah.
2. Awasthi, Pramod. Panjab samasya: Ek vishleshnatmak adhyayan. Vikram. Dr H S Sabharwal, Prof, Department of Political Science, Vikram University, Ujjain.
3. Baliram Singh. Impact of democratic decentralisation and rural development. Magadh.
4. Chaudhuri, Alok Narayan. Evolution of the political thought of Jayaprakash Narayan. Calcutta.
5. Ellaba Kar, Ashok Kumar. Madhya Pradesh Vidhan Sabha mein virodhi dal ke bhumika ka vishleshnatmak adhyayan. Barkatullah.
6. Gajbhiya, Digambar Dudharam. Samtechya hakkanche sarankshnam va vikasababati bhumika. Nagpur. Dr Vasant R Rayapurkar, Prof, Bishano Nagar College, Nagpur.
7. Jafri, Syed Wali Husain. A comparative study of political ideas of Nizamul-Mulk Tusi and Abdul Hasan-al-Mawardi. AMU. Prof S A H Haqqi.

8. Jainival, Rajendra. *Bharat mein sampradayikata ke rajniti: Vishesh sandarbh Ranjanam Bhumi Babari Masjid*. Vikram. Dr M K Maheshwari, Asstt Prof, Department of Political Science, Vikram University, Ujjain.

9. Jogaiah, G. *District politics in AP: A case study of Medak*. Osmania.

10. Mukhopadhyay, Samir Kumar. *Operation Barga: A study in changing rural power structure in West Bengal*. Calcutta.

11. Nizamuddin, Khaja. *Educational rights of minorities under the Indian Constitution: A case study of Andhra Pradesh*. Osmania.

12. Sahu, Kiran. *Nyayapalika prashasan ke jev manovalgyanik samajik samasyayen, ativadi sakshiyon ke sandarbh mein: Bhopal Jile va Satra Nyayalaya ke vishisht udaharanon ke vishleshan ke adhar per*. Barkatullah.

13. Sharma, Snehlata. *Navin Loksabha mein matdata vyavhar: Rajgarh Jile ke sarvekshan per adharit*. Vikram. Dr Nisha Vashishth, Department of Political Science, Vikram University, Ujjain.

14. Singh, Sudhir Kumar. *The national front for the liberation of South Vietnam: A study of its origin and growth, 1960-75*. JNU. Dr Ganganath Jha, Asstt Prof, Centre for South, Central, Southeast Asian and South West Pacific Studies, Jawaharlal Nehru University, New Delhi.

15. Sudhakar, E. *SAARC: A study of issues, problems and prospects*. Kakatiya. Prof B Venkateshwarulu, Department of Political Science, Kakatiya University, Warangal.

16. Tiwari, Abha. *Bharat mein Sikh algavvad evam videshi shaktiyon ke bhumika*. Vikram. Dr C S Panwar, Asstt Prof, Department of Political Science, Vikram University, Ujjain.

17. Tiwari, Surendra Kumar. *Bhartiya rajniti mein kshetriya pravrittiyan: Ek vishleshnatmak adhyayan*. H S Gour. Dr R C Dubey, Department of Political Science, Dr Hari Singh Gour Vishwavidyalaya, Sagar.

18. Veena Kumari. *Jammu and Kashmir State and Central Asia political relations, 1857-1947*. Jammu. Dr Vidya Bhushan, Reader, Department of Political Science, University of Jammu, Jammu.

Economics

1. Arora, Yogesh. *Madhya Pradesh ke arthik vikas mein agrani sank yojana ke bhumika: Guna Jile ke vishesh sandarbh mein*. Jiwaji. Dr S N Chaturvedi, Department of Economics, Govt S L P College, Morar.

2. Babi Reddy, Tadimarri. *Causes and consequences of rural-urban migration: A study in Anantapur, Andhra Pradesh*. Andhra.

3. Basak, Nandita. *Aspects of growth of an industrial town: A regional perspective: Case study of Durgapur, West Bengal*. Calcutta.

4. Bhatele, Om Prakash. *Gwalior van-mandal mein vansam-pada ka ek arthik adhyayan*. Jiwaji. Dr S S Sengar, Department of Economics, Govt College, Jaura, Murena.

5. Bhaumik, Sarmila. *India's export trade during the plan period, 1951-1985: Growth, problems and prospects*. Calcutta.

6. Choube, Rajeev. *Madhya Pradesh ke Vidisha evam Raisen Jilon ke arthvyavastha mein krishi adharit udyogon ka yogdan*. Barkatullah.

7. Esmat Abou El-Ella Mohamed. *Productivity and efficiency of the formal educational structure, trends and prospects: A case study of Egypt during 1976-86*. Jamia. Dr Khan Masood Ahmad, Department of Economics, Jamia Millia Islamia, New Delhi and Dr B G Tilak, National Institute of Educational Planning and Administration, New Delhi.

8. Gairola, Kusum. *Garhwal ke krishi arthvyavastha mein mahilayon ka yogdan*. Garhwal. Dr Anjali Bahuguna.

9. Gautam, Raj Kumar. *Madhya Pradesh mein Mandala Jile ke van sampada ka vishleshanatmak adhyayan*. Durgavati. Dr V P Karwal, Keserwani College, Jabalpur.

10. Goel, Sangita. *Capital structure and resource use efficiency of sugarcane based farming in Saharanpur District of Western UP*. Meerut.

11. Gupta, Gaurishankar. *Gwalior Sambhag ke Datiya Mandal mein arthik aparadhon ka vishleshanatmak adhyayan, 1983-1988*. Jiwaji.

Dr N M Lal, Principal, Govt Degree College, Balaji Mohina Bhind.

12. Gupta, R C. *Jhansi Janpad mein Harijan samudaya ke garibi ke samasyaon ka arthik avalokan*. Bundelkhand. Dr A P Srivastava, Bundelkhand University, Jhansi.

13. Gupta, Suman. *Ujjain Jile ke audyogik vikas mein vyavasayik bankon ka vittyayogdan*. Vikram. Dr Sharda Shinde, Department of Economics, Govt Arts and Commerce College, Ratlam.

14. Krishna Rao, Peesa. *Cooperatives and agricultural credit: A case study of Visakhapatnam District, Andhra Pradesh*. Andhra.

15. Narasimha Moorthy, Upadhyayula. *'SAARC-ASEAN economic integration: A strategic imperative for expansion of collective self-reliance*. Andhra.

16. Ninawe, Anandrao Balaji. *A socio-economic study of forest villages in Nagpur District, 1971 to 1981*. Nagpur. Dr D G Pawas-kar, Department of Economics, V N Institute of Arts and Social Sciences, Nagpur.

17. Panduranga Reddy, J. *Identification of backward regions: A study of regional disparities in AP*. Osmania.

18. Parida, Subhas Chandra. *Personnel profession in India: A study of its past, present and future*. Berhampur. Dr G C Patro, Reader, Department of Industrial Relations and Personnel Management, Berhampur University, Berhampur and Dr B P Rath, Reader, Department of Industrial Relations and Personnel Management, Berhampur University, Berhampur.

19. Ruprah, Gursharan. *Bank finance to small and marginal farmers: A case study of selected house holds in Jabalpur District*. Durgavati. Dr (Smt) Deoki Nair, Principal, Govt College, Ambikapur.

20. Sanjeeva Reddy, P. *Productivity and efficiency under different sources of irrigation: A case study of Telangana Region of AP*. Osmania.

21. Satyanarayana Reddy, M. *Distribution of Government wastelands programme: An evaluation; a case study of Mahboob Nagar District of AP*. Osmania.

22. Sekar, Hemavathi. *Evaluation of benefits to the community from housing programmes for economically weaker sections*. Anna.

23. Sharma, Sunder Prasad. *Agricultural planning in India: A critical evaluation*. Magadh.

24. Shroff, Laxmidas. *Madhya Pradesh ke adivasiyon ke arthik samasyaon ka Nimar Jile ke vishesh sandarbh mein vishleshnatmak adhyayan*. Barkatullah.

25. Soundaram, S V. *Assessment of agricultural production potential: A case study*. Anna.

26. Venkataravi, R. *Economic aspects of seri-culture in Dhar-mapuri District of Tamil Nadu*. Bharathidasan. Dr C Than-gamuthu, Prof and Head, Department of Economics, Bharathidasan University, Trichy.

27. Vijaya Kumar, K S. *Land reform: Productivity employment and income change*. Bangalore. Dr T Srivenkataramana, Head, Department of Statistics, Bangalore University, Bangalore.

Law

1. Chhabra, Sunil. *Constitutional philosophy of legal aid in India: An empirical study of the administration of legal aid to the weaker sections of the society in the State of Himachal Pradesh*. HP.

2. Kamal Jeet Singh. *Constitutional philosophy of distributive justice: A socio legal study*. HP.

3. Mohamed Azmatulla. *Offences under labour enactments: A critical study of their economic cost and consequences*. Osmania.

4. Om Prakash. *Tribunalisation of justice in India: A study of growth and development of service tribunals*. HP.

Public Administration

1. Shah, Shamsuddin Jamaluddin Takiya Masoom. *Problems in the administration of the Drugs and Cosmetics Act, 1940 with special reference to a private and a public sector of Nagpur*. Nagpur. Dr S L Dave, Head, Department of Public Administration and Local Self Government, Nagpur University, Nagpur.

Education

1. Basavaraju, G P. Individual need strength, locus of control and job involvement in relation to job satisfaction and performance of teachers in secondary schools of Bangalore City. Bangalore. Dr D S Shivananda, Principal, Sri Sarvajna College of Education, Bangalore.
2. Biswal, Premananda. Vocationalisation of education at the +2 stage in Himachal Pradesh: An evaluative study. HP.
3. Gautam, Shashi Bala. Development of creative thinking and leadership among Navodaya Vidyalaya students. HP.
4. Gill, Jagtar Singh. Alternations in C-P index body composition and anaerobic capacity as a result of similar training programme in males and females. Jiwaji. Dr B S Brar, Laxmibai National College of Physical Education, Gwalior.
5. Gupta, Anita. A study of deviant students in relation to personality variables. Jammu. Dr Aruna Suri, Prof, Department of Education, University of Jammu, Jammu.
6. Hymavathi. Evolving a teaching model for developing the effective aspects of children as envisaged in national policy on education, 1986. Osmania.
7. Kakkar, Usha. History and survey of women education in Bundelkhand. Bundelkhand. Dr R P Pandey, Bundelkhand Degree College, Jhansi.
8. Leela. Development of an approach to teach English vocabulary to students of non-English medium. Osmania.
9. Mubark Singh. Evaluation of role of colleges and university of Northern Zone in implementing adult education programme. Jammu. Dr Lokesh Verma, Lecturer, Department of Education, University of Jammu, Jammu and Dr N R Sharma.
10. Nautiyal, Anil Kumar. The efficiency of teacher performance as related to their values, effectiveness, morale and students perceived teacher characteristics. Garhwal. Dr G S Aswal.
11. Panda, Pramod Kumar. A study of the composite effect of a package of certain curricular strategies on selected cognitive and non-cognitive characteristics of rural primary school students of Orissa. HP.
12. Purushottam Bhatt, Kokilaben. An investigation into creativity development by increasing thinking process through reading comprehension in Gujarati pupils of class VII in relation to certain variables. Patel.
13. Rema, M. A comparative study of the educational thoughts of Swami Vivekananda and Mahatma Gandhi. Calicut. Dr S Rajappan Nair, Vaisakh, Pandit Colony, Kowdiar, Trivandrum and Dr R Sukumaran Nair, Hony Director, Teacher Education Centre, Barton Hill, Trivandrum.
14. Shailaja Kutty, P R. Influence of selected anthropometric measurements and body types on selected track and field events. Jiwaji. Dr Jayant Mukerji, Laxmibai National College of Physical Education, Gwalior.
15. Sharma, Suresh Kumar. Development of predictive battery of tests for scientific aptitude for the students in eleventh class. Jammu. Dr S P Suri, Prof, Department of Education, University of Jammu, Jammu.
16. Subhash, B. Effect of disequilibrium equilibration model of teaching Biology on achievement and cognitive development of higher secondary students. Kerala. Dr K R Sivadasan, Prof, Department of Education, University of Kerala, Thiruvananthapuram.
17. Uniyal, B P. A study of students activism in relation to psycho-social characteristics of graduate students. Garhwal. Dr G S Aswal.
18. Usha, H B. Language development in primary school entrants. Mysore.
19. Vajpayee, Amod Prakash. A study of B Ed pupil teachers communication skills with respect to teaching success, vocational anxiety and students achievement. Barkatullah.
20. Varghese, V J. Folk-arts as a medium for nonformal education. Kerala. Dr N Vedamani Manuel, Director, C E R I D. Mitraniketan, Velland, Thiruvananthapuram.
21. Verma, Sudesh Bala. Trend analysis of educational growth at school stage in Jammu and Kashmir State for the years 1990-2010 and estimation of requirements. Jammu. Dr (Mrs) Meenak-

shi Chopra, Reader, Department of Education, University of Jammu, Jammu.

22. Walia, Kiran. Secondary teacher education programmes in North India: An evaluative study. Jamia. Prof Mohd Miyan, Department of Foundation of Education, Jamia Millia Islamia, New Delhi.

Commerce

1. Aggarwal, Santosh Kumar. Gramin anusuchit jati varg ke arthik unnyana mein gramini vikas karyakarmen ke bhumika. Bundelkhand. Dr Shriram Aggarwal, Reader, Department of Rural Development and Cooperation, Bundelkhand University, Jhansi.
2. Aggarwal, Satish Kumar. Madhya Pradesh Rajya Sadak Parivahan Nigam ka tulnatmak vittiya anusheelan. Ghasidas. Shri J K Aggarwal, G-4, Shanti Sikara Apartment, Rajbhavan Road, Somajigada, Hyderabad.
3. Aggarwal, Swatantra Kumar. The effect of rural electrification on rural development. Bundelkhand. Dr Shriram Aggarwal, Reader, Department of Rural Development and Cooperation, Bundelkhand University, Jhansi.
4. Anand Ballabh. Uttar Pradesh ke laghu udyogon ke vittiya vyavastha ka vishleshnatmak adhyayan: Garhwal mandal ke vishesh sandarbh mein. Garhwal. Dr R R Nautiyal.
5. Arundeeep Singh. The role of cooperative sector in rural financing with special reference to UP State Cooperative Land Development Bank Ltd. Garhwal. Dr H P Pandey.
6. Ashok Kumar. Role of small scale industries in the development of Garhwal. Garhwal. Prof K S Negi.
7. Balbir Singh. International Bank for Reconstruction and Development and its role in the economic development of India. Garhwal. Dr J S Bisht.
8. Dagar, Inder Jeet. Managerial perspectives of the personnel problems in electronics industry in the small scale sector in the U T of Delhi. Jamia. Dr M Mustafa, Lecturer, Department of Commerce, Jamia Millia Islamia, New Delhi.
9. Gujarathi, Ajay. Madhya Pradesh ke vikas mein Laghu Udyog Seva Sansthan ke bhumika: Ek arthik vishleshan. Devi Ahilya. Dr S R Sondhi, 152, Radio Colony, Indore.
10. Kale, Ajay. Madhya Pradesh rajya utpadan shulk: Ek vishleshnatmak adhyayan. Devi Ahilya. Dr B S Bhandari, Principal, Shri Cloth Market Kanya Commerce College, Indore.
11. Khan, Mohammed Altaf. Problems of recovery of priority sector finance in the State of Orissa: A case study of State Bank of India. Berhampur. Prof P K Sahu, Department of Commerce, Berhampur University, Berhampur and Prof Jagannath Panda, Department of Commerce, Berhampur University, Berhampur.
12. Khan, Mohd Tufail. Export performance of spices since Third Five Year Plan. AMU. Dr B A Iqbal, Reader, Department of Commerce, Aligarh Muslim University, Aligarh.
13. Mishra, Chhaya Mangal. Madhya Pradesh mein audyogikaran ke marg ke samasyaen: Pithampur ke vishesh sandarbh mein. Devi Ahilya. Dr S S Talreja, Prof, Department of Commerce, Govt Arts and Commerce College, Indore.
14. Mohammad Abul Hasnat. Role of nationalised banks in the development of small scale industries in Patna. Patna. Dr P N Sharma, Principal, Vanijya Mahavidyalaya, Patna.
15. Panigrahy, Dibakar. Cash flow of gauger of corporate health and signaller of sickness. Berhampur. Prof P K Sahu, Department of Commerce, Berhampur University, Berhampur.
16. Purohit, D N. Madhya Pradesh mein soyabeen ka vipadan. Devi Ahilya. Dr P L Rathore, Department of Commerce, Indore Christian College, Indore.
17. Raj, Arpana. Industrial relation in public sector enterprises in India: A special study of public sector units in Naini, Allahabad. Bundelkhand. Dr D C Aggarwal, Bundelkhand College, Jhansi.
18. Satyanarayana, S V. CAG: Public enterprise interface. Osmania.
19. Seetharaman, K S. Performance analysis of a regional rural bank in a backward district: A case study of Adhiyaman Grama Bank. Bharathidasan. Dr A N Rajamani, 100/B First Floor, Gandhi Road, Srirangam, Trichy.
20. Sharma, Sita Ram. Role of cooperative banking in financing agriculture in Jammu and Kashmir. Jammu. Dr N S Gupta, Prof.

Department of Commerce, University of Jammu, Jammu and Dr R D Sharma, Reader, Department of Commerce, University of Jammu, Jammu.

21. Subhashini, M. **Marketing of handloom products: A case study of Andhra Pradesh Handloom Weavers Co-Operative Society Ltd, APCO, Gulbarga.** Dr K V Prabhakar, Chairman, Department of Commerce, Gulbarga University, Gulbarga.

22. Thakur, Sharmila. **Product dissonance, consumer opinion of Indian marketing and a comparison of consumer laws of some countries.** Garhwal. Dr Alok Saklani.

Home Science

1. Gandotra, Anuradha. **Nutritional profile of rural pre school children living in Jammu Province.** Jammu. Dr J I S Jaswal, Prof, Department of Home Science, University of Jammu, Jammu.

2. Ghadekar, Rajani Subhash. **Effectiveness of teaching aid oriented technique with special reference to housing at under graduate level in the Nagpur University.** Nagpur. Prof (Mrs) R S Patwardhan, Head, Department of Home Science, Nagpur University, Nagpur.

3. Singh, Reetam. **Jhansi kee pararthmik aur nursari mahila shikshikayon kee samajik arthik sthiti.** Jiwaji. Dr G D Gambhir, Department of Economics, M L B Art and Commerce College, Gwalior.

4. Sinha, Neelima Dilipsingh. **Prolonged deprivation: Its effect on some mental abilities and self insight of secondary and higher secondary school children.** Nagpur. Dr D S Janabandhu, Institute of Arts and Social Sciences, Nagpur.

Management

1. Chandra Sekharan, C. **Managerial styles in select organizations in India.** Delhi.

2. Chautray, Nishikant Narayanrao. **A study of the objectives and performance of Maharashtra Small Scale Industries Development Corporation Limited.** Nagpur. Dr S N Bodhankar, Department of Commerce, C P Berar Education Society's College, Nagpur.

3. John, Isac. **Impact of managerial styles on workers and its effect on productivity.** Nagpur. Dr V S Shenwai, Prof, S B City College, Nagpur.

4. Nagender, T. **Regulated markets in Telangana.** Osmania.

5. Siriya, Pratibha M. **A critical study of Unit Trust of India, 1964-1984.** Nagpur. Dr G G Fukey, Department of Management Studies and Research, Dhanwate National College, Nagpur.

6. Thillainayagam, N. **A study of man-power resource inventory for rural development in Kohima District, Nagaland.** Gandhigram. Dr M Aram, President, Shanti Ashram, P-17, Kovaipudur, Coimbatore.

EDUCATION NEWS INDEX

A list of select articles and editorials on education from newspapers received in the AIU Library during February 1993

EDUCATIONAL PHILOSOPHY

Joshi, Uma. **Educated youth and value system.** The Assam Tribune 1.2.93.

Lalit Kumar. **Gandhi's idea of 'true education'.** Patriot 2.2.93.

EDUCATIONAL PSYCHOLOGY

Fernandez, Mary Dorothy. **Education: The crucial years.** The Hindu 9.2.93.

Ganesan, Lalitha. **Ability differs from person to person.** The Hindu 2.2.93.

Ward, Fredrick. **To create confidence, IQ test culture must be redefined.** The Pioneer 2.2.93.

EDUCATIONAL SOCIOLOGY

Ahmed, Firoz Bakht. **Urdu schools create ghettos of the mind?** The Pioneer 2.2.93.

Amrik Singh. **From Jamia to Ayodhya.** The Hindustan Times 22.2.93.

BACKWARD AND forward (Editorial). The Times of India 3.2.93.

FIRST STEP on Mandal report (Editorial). The Tribune 3.2.93.

MANDAL TANGLE (Editorial). The Times of India 25.2.93.

Pal, R M. **Mandal: The coin has one side...** The Hindu 8.2.93.

Rajagopalachari, J. **Some thoughts on reservation.** The Hindu 9.2.93.

Singhvi, Abhishek. **Mandal verdict: A mixed bag.** The Hindustan Times 16.2.93.

SKIMMING OFF the cream (Editorial). Patriot 5.2.93.

UNEMPLOYMENT: Sex discrimination (Editorial). The Hindustan Times 25.2.93.

EDUCATIONAL POLICY & PLANNING

Balachander, K K. **Education: a neglected industry.** Free Press Journal 28.2.93.

GETTING THE new policy working (Editorial). The Hindu 12.2.93.

TAKEN AS read (Editorial). The Statesman 25.2.93.

EDUCATIONAL ADMINISTRATION

Amrik Singh. **Capitation punishment.** Deccan Herald 27.2.93.
Stronger UGC can set Bihar right. The Times of India 12.2.93.

Arulandram, H G S. **Universities as centres of excellence.** The Hindu 2.2.93.

Bal Krishna. **Blow to capitation fee concept.** The Hindustan Times 8.2.93.

Devy, G N. **Colleges must fend for themselves.** The Times of India 26.2.93.

Delinking teaching from exams. The Times of India 5.2.93.

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Standing (L to R) : Manjeet Dua (Table Tennis), Shiny Wilson (Athletics), Pappu Yadav (Wrestling), Bahadur Prasad (Athletics), Dr. L.C. Gupta (Sports Medicine), Limba Ram (Archery), Sunita Godara (Marathon), Dr. Narottam Puri (Sports Broadcasting), Khajan Singh (Swimming) and Ajit Pal Singh (Hockey) were conferred awards for their distinguished services to the world of Sports at a function held in New Delhi recently. Sitting (L to R) : Dr. Kiran Sandhu, Secretary, Sports Sciences Research Foundation, Shri Randhir Singh, Secretary-General, IOA, Prof Mohd. Amin, former VC, Jamia Hamdard, Shri B. N. Bhagwat, Secretary, Deptt of Sports & Youth Affairs, Dr. Jawahar Jain, President of the Foundation and Mr. J. Braganza of Lyka Labs.

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HIGHER EDUCATION A FUNDAMENTAL RIGHT

J.N. Kapur*

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IN THIS ISSUE

Higher Education : A Fundamental Right	1
Reforms in Higher Education	4
Autonomous Scheme : Myths and Realities	9
Rationalisation of Periodical Subscriptions	14
Convocation Bharathiar University, Coimbatore	18
Campus News Reorganising Undergraduate Courses	21
Higher Allocation for Education	21
Varsity Education in the New Eco Policy	21
Ambedkar Open Varsity Offers Doctoral Programmes	22
NCRA Graduate School	23
Admission to Biotechnology Courses	24
Agriculture National Symposium on Biotechnology	25
Sanitation Week	25
Sports News Sports Sciences and Sports Performance	26
Theses of the Month	28
Classified Advertisements	32

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Editor :
SUTINDER SINGH

The Supreme Court Judgement and its Implications

The judgement of Justices Kuldeep Singh and R.M. Sahai of the Supreme Court of India in the case of *Mohini Jain vs The State of Karnataka* is epoch making for the following reasons :

- It has dealt a severe blow to the evil practice of capitation fees in medical and engineering colleges in some States in India;
- It has re-established the principles of equality of opportunity and of admission on merit in institutions of higher learning ; and
- It has stated categorically that though Education is not a fundamental right, it is obligatory for the State to provide for education for all.

It is too early to say whether the judgement will be sufficient to completely eradicate the practice of capitation fees or it would simply drive the practice under the table. Even otherwise, the vested interests behind this practice are very powerful but it is obvious that the judgement will strengthen the hands of those who want to fight this evil.

This judgement may also influence, but not eliminate the practice of large 'Donations' in the case of admission to public schools and certain other courses in great demand in the universities. In the fight against all these evils, one battle has been won, but the war has still to go on.

This judgement will also discourage other colleges and universities from making unfair admissions without merit because the affected students may now go to courts to demand justice.

This judgement has also raised the question whether it is not time to amend the Constitution, if necessary, to give full powers of initial recognition to new medical colleges, to Medical Council of India (MCI) and whether the Council should also be given the power of disaccreditation of existing medical colleges and departments if they fail to fulfil the conditions laid down by MCI. Judgement will also encourage discussions whether similar powers should also be given to the All India Council of Technical Education or University Grants Commission or some other special agencies for engineering colleges and universities.

This judgement should also encourage discussion whether it is time to amend the Constitution to make Education a fundamental right.

Education as a Fundamental Right

The learned judges have argued that since the preamble to the Constitution talks of assuring dignity of every individual, its article 38 talks of a social order in which justice – social, economic and political – shall inform all the institutions of national life, article 39 talks of minimising inequalities of income and inequalities of status, article 41 of the right to work and since for all these education is essential, 'right to education', therefore, is concomitant to fundamental rights enshrined under Part III of the Constitution, though it may not be a fundamental right in itself. The Constitution

*Jawahar Lal Nehru University and Mathematical Sciences Trust Society,
C-766, New Friends Colony, New Delhi-110 065.

also directs the State to make effective provision for securing the right to education within the limits of its economic capacity. All governments claim that they honour this right to education in letter and in spirit.

The question is not so much of making education a fundamental right, but of making "equal access to education as a fundamental right". Even this is implicitly there, since equality is a fundamental right and education is a right.

Free Education as a Fundamental Right

The Constitution has already provided for free and compulsory education till the age of 14 years. The goal was to be achieved by 1961. Unfortunately, the goal has not been achieved till today and even our latest plan is to provide education for all by 2000 A.D. But even there, we expect 20% dropout rate till class 5 and 40% dropout rate till class 8. What was expected to be achieved in 10 years by framers of the Constitution is not likely to be achieved even in 50 years.

It also appears that the framers of the Constitution also expected the economy to develop sufficiently to allow the state to provide for free education till the senior secondary stage in 20 or 30 years. This dream which has been realised in most countries today, may not be realised in our socialist state for another 30 or 40 years at the rate at which we are moving.

Education for all or Equality of Education for all

Suppose tomorrow all states and central governments decide to exempt the students upto class 12 from payment of tuition fees. This will mean some strain on our resources, but we may be able to bear this strain. However, will this bring us in level with the developed countries. The answer is a clear 'no' because it is not sufficient to provide education of any quality for all, we have to provide education of same quality. The 5th All India Education Survey conducted by National Council of Educational Research and Training (NCERT) has shown that 50.26% of primary schools in the country do not have pucca roofs over their heads and in fact in the states of Assam, Manipur, Mizoram, Meghalaya, Nagaland and Tripura, only less than 10% schools have pucca buildings. The survey also shows that only 47.3% of the primary schools have drinking water facilities, only 15.50% of primary schools have laboratories and only 40% of all schools have any libraries at all.

There are a large number of single teacher primary schools and there are quite a large number of schools which exist only on paper or in which no teaching is done

though teachers draw their salaries regularly. There are a large number of schools without libraries, black boards or chalks because while the government guarantees salaries of teachers, it does not guarantee even minimum infrastructural facilities.

The day that we can provide the same basic facilities in our schools as are provided in the other countries is far far away and if the population continues to grow at the present level, the day may never come.

Right to Higher Education

It is in this context that we have to assess the demand often made by university union leaders and politicians that it is the fundamental right of all students who pass the higher secondary examination (in whatever division) to get admission to colleges and universities and the government must admit every such eligible student irrespective of the facilities that exist or alternately the government must provide for funds for extra seats in colleges and universities.

Such a demand has not been accepted by almost any country in the world. Higher education is not regarded as a fundamental right or a birth right. It is a right to be earned by hard work. This is always restricted by the facilities available and the needs of the economy. No country agrees to provide sub-standard education or to produce larger number of graduates than can be absorbed by the economy. The right to higher education has also to be earned in another way by students paying for it in a significant way, either by earning before joining higher education or earning while receiving higher education or by taking bank loans. The percentage of expenditure on higher education borne by the students is much higher in other countries and the quality of education there is also much superior.

This does not mean that we should restrict admission to higher education. We have to increase number of students in our colleges and universities, but some essential conditions for it are :

- Improvement of school education so that schools produce more students who can benefit from higher education.
- Increase facilities in higher education to cope with larger numbers in higher education.
- Improvement in economy to be able to absorb a larger output by the universities.
- Provision of facilities for non-formal education.

7 APR 1993

This will also need increase in resources for both school and university education. These can come from :

- Government agreeing to increase its contribution to education to 6% of our Gross National Product (GNP) from the present 3%.
- Industries, the beneficiaries of education, agreeing to pay an education cess.
- Students agreeing to pay higher fees by agreeing to earn or take bank loans.
- Graduates benefiting from the educational system paying for the education of the next generation from the increased incomes they get.

Right to Admission, Right to Degree and Right to Education

These are not identical. Many students when they want the right to education, actually want the right to admission to colleges in order to be able to enjoy college life, since many of them are not anxious to attend lectures or study in libraries. They are prepared to work for two or three months near the examination as a necessary evil and they would even prefer to avoid that if possible. In fact most of them want the right to get degrees with minimum effort since these degrees are both status symbols and are essential for getting jobs. There are some who are interested in real education, in real learning and in the adventure of knowledge, but their number, under the present conditions, is small.

In fact nobody can deprive one of the right to educate oneself. If one receives real good school education, one should be able to learn a great deal through books, films, correspondence courses, etc. We may go even further and say that every citizen in democratic country has the right to receive secondary education at the tax-payers' cost and has the duty to continue life-long education through his own earnings.

What is Merit?

The Supreme Court has upheld the right to get admission on the basis of merit which depends on marks obtained in qualifying examination. But under the present conditions of highly unequal facilities in school education, can we talk of marks as a true indicator or merit?

Do two students, both with 60% marks, have the same merit, if one has studied in a rural school with poor teaching, with no library and under no private tuition, and the other has studied in a public school or a Central

School with all facilities including a very helpful home background and the help of private tutors? School education almost tilts the balance in favour of children from richer and educated classes and so admission on the basis of marks does not, under the present conditions, provide equal opportunities for all.

Money power and status power will continue to increase inequalities in society, unless we can provide equally good school education for all students and force all students to study in schools with similar facilities.

If the Constitutional Directive of social, economic and political justice has to be achieved, it has to start with school education. All weak schools have to be upgraded before more funds are spent on poor quality higher education. We may even convert some poor quality colleges into good quality high schools for this purpose.

If we want social and economic justice and if we want to fulfil the Constitutional Directive of everybody living with dignity, we have to double the funds spent on education and spend all the increased funds for the next 5 years on improving school education only.

Education as a Right or as a Duty

In a democratic system citizens have not only right but they have also duties. It is the duty of every citizen and specially of adult citizens to get educated.

The Constitution had suggested free and compulsory education upto the age of 14 years. If it had suggested the same compulsory education for all illiterate persons of the country, the face of the country would have been changed. We would have got more literacy in 10 years and 100% literacy today because literate parents would have taught their own children and there would have been few dropouts, but while we could talk of compelling the children to go to school, we did not dare to talk of compelling the voters, who were our masters, to study.

If every citizen considers it his national and patriotic duty to continue learning throughout his life and if the state provides facilities for this purpose and the expenses are borne by the beneficiaries, we can have a learning society of our dreams.

We have been too conscious of our rights and too little of our duties. We have always asked what the nation can give us. Let us ask ourselves once in a while what we can give to the nation. Let us give at least educated citizens to the nation.

Reforms in Higher Education

The Case of Undergraduate Education

S.C. Bhatia*

Introduction

Reforms in higher education, especially in undergraduate education, have been guided by a concern for

- (i) improvement in the quality of education through a dual process of energising functioning of the system and its linkage with the development process in all its dimensions; and
- (ii) increasing access to opportunities for undergraduate education without having to expand the institutional infrastructure for formal education.

The adoption of the National Policy on Education (NPE) and its Programme of Action (1986) was followed up by the University Grants Commission through a series of initiatives :

- (i) Scheme of Autonomous Colleges,
- (ii) Introduction of Academic Calendar and Minimum Standards in Universities,
- (iii) Renewed emphasis on Restructuring of Undergraduate Courses,
- (iv) Scheme of Examination Reforms and Courses, and
- (v) Scheme of Academic Staff Colleges.

The policy planners had stated their motivation for the envisaged reforms, rather explicitly. They had felt that

- The courses offered by the universities needed to be reorganised to have greater relevance and utility; and
- The eroded credibility of the evaluation system needed to be repaired and revitalized.

The policy planners had felt that the system needed to be made "dynamic" and that it could so become by these steps.

A Look Back

Now that one plan period has passed, the time is opportune to assess the trends that are discernible in

regard to the envisaged changes. Were these changes conceived properly by the managers in the system of higher education both at the apex level (the Department of Education in the Ministry of Human Resource Development and in the State Ministries of Education and the University Grants Commission) and in the institutions of higher education? Have these envisaged changes had the desired effect?

The Question of Priorities

The number of universities and colleges in the country have been rapidly increasing despite policy concern at lack of "minimum level of infrastructure for the maintenance of quality and standards" in these institutions. The NPE Programme of Action had recommended steps "to ensure that no new institutions are established without careful planning and the provision of the necessary physical facilities" and, "to prepare a plan to equip the existing institutions in a phased manner on the basis of norms prescribed."

At the time of approval of the NPE and its Programme of Action, the country had 150 universities and 5000 colleges. By the end of the Seventh Five Year Plan, the UGC reported 180 universities and 7200 colleges. Enrolment in the institutions of higher education has risen from 34 lakhs to 42 lakhs. The substantial growth of enrolment in higher education is at the undergraduate stage; it has risen from 29 lakhs to 37 lakhs.

The undergraduate enrolment registered substantial expansion in the sixties; the decade was in fact, known as the decade of the college boom. The seventies did demonstrate lowering down of the percentage growth in undergraduate enrolment; it still continues to be around 4.7 percent each year. The growth rate in undergraduate education was around 14 percent in the sixties, it fell to 3.2 percent in the seventies.

There has been substantial increase both in the number of institutions and in enrolment. The apex bodies could probably argue that, within the framework of their eligibility requirements as specified in the 2(F) list, many of these institutions are not considered as viable colleges. Such institutions do not receive any assistance from the apex bodies. Yet, these cannot be wished away since these are imparting collegiate education and their certification is recognised by their respective universities.

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The expansion of enrolment in undergraduate education has been accompanied by the setting up of colleges which are generally lacking in minimum infrastructure. Such colleges offer courses which prepare the youth for the already narrowing down market of white-collared jobs. One document describes this situation in the following words.

"....It is the home of the discarded hopes and nameless fears which provide ready fuel for the occasional conflagrations of social upheaval. It is at this level and in this segment of the spectrum that the mismatch between education and employment is at its highest and the phenomenon of educated unemployment poses the most serious problems for policy-makers and planners. It is this sector of higher education which largely performs the waiting room function not only for a relatively smaller number of the employable unemployed but for a considerably larger horde of the unemployable unemployed.¹ (p.57).

The policy responses to this phenomenon have so far been both elitist and "negative" in nature : do not establish any new institutions without necessary physical facilities. The ground realities have not accepted the policy since regional inequities continue to generate local demand for higher education for want of any meaningful initiatives at the secondary and senior secondary stages of school education.

The document cited earlier points out that while in Chandigarh, "enrolment per lakh of population crosses the 5,000 mark; it does not even reach three digits in the outer hills of Jammu & Kashmir; or that while the women's share in enrolment is more than half in Southern Kerala, it barely touches the 8 percent mark in western plains of Assam. Regional disparities in higher education are entrenched in the basal strata of the spatial structure of inherited underdevelopment; its colours are etched in the bedrock of inter-regional inequity."² (p.65).

The trickle-down effect of development planning in India continues to support and spur demand for higher education both in cities and towns. More and more colleges are being opened by social entrepreneurs despite an elitist and negative policy framework. There is need to examine the possibility of a change in this policy framework by laying exclusive emphasis on the state's commitment to provide resources for minimum infrastructure to all institutions, irrespective of their eligibility under section 2(F). The institutions must be left to themselves to raise resources for their development and quality-oriented performance. Market forces would generate sufficient pressure for innovative institutional behaviours.

The current practice of excluding nearly 55 percent of the colleges from eligibility for assistance and overdose of support for well-resourced institutions in urban areas tends to run counter to the specified constitutional goals and the strengthening of democratic behaviours in the country. It is no use being apologetic or evasive by

saying that biases in education policy are part of the biases in national development policies. The very "excluding" or "elitist" nature of our policies tends to undermine faith in the bonafides of centres of political power.

It is unfortunate that the pursuit of such an elitist policy in higher education has also led to the commitment of a larger share of development resources to equally elitist concepts in the area of "reforms" in higher education. One of these is known as Autonomous Colleges.

Autonomous Colleges

The strategy of autonomous colleges has been visualized in the National Policy in Education-1986 as an intermediate step towards a stage wherein the "affiliating system is replaced by a freer and more creative association of universities with colleges". It further stated that "autonomy and freedom will be accompanied by accountability." Under the scheme, the college has to "earn autonomous status continuously and not once for all".

The National Policy on Education-1986 recognised the ineffectiveness of centralised academic and administrative control of institutions of higher education. It advocated functional and academic autonomy of educational institution, opportunities for experimentation and innovation by the teachers and leadership role for the heads of institutions. By this strategy of reform, the National Policy visualized for the teachers a key role as change agents promising in the process measures aimed at avenues for professional growth and enhancement in status.

In activity terms, autonomous colleges are required to initiate action in the following areas :

- (i) innovation and changes in curriculum, teaching methodologies and system of examination,
- (ii) energising co-curricular activities, sports, and other measures aimed at encouraging student participation,
- (iii) formulation of research programmes,
- (iv) collaborative arrangements developed with other institutions, and
- (v) participation by students and teachers in various extension programmes both in the college and in the community.

It is interesting to note that the University Grants Commission views "autonomy" not as "a reward for the good performance in the past but rather a means to achieve higher standards and greater creativity", with the college going through a preparatory phase "to take over the role of an autonomous institution". The scheme grants to teachers of the college "absolute freedom to determine courses of study and syllabi, prescribe rules for admission subject to reservation policy of the

government and, evolve methods of evaluation and conduct of examinations".

The UGC had hoped to grant autonomy to 500 colleges in the seventh five year plan. So far 110 colleges have chosen to accept autonomous status. The states of Tamil Nadu, Andhra Pradesh and Madhya Pradesh account for 90 such colleges. The teachers' organisations have opposed the concept on account of a fear that it would lead to increase in workload without adequate compensations and that it would make college managements more authoritarian. Most state governments realize the political implications of the teachers' viewpoint, they have preferred to remain reluctant to implement the scheme. West Bengal and Kerala have refused. Haryana has cited financial constraints. In Maharashtra, Karnataka, Nagaland, Assam, Manipur and Delhi, the Acts of universities have not been amended to provide for autonomy to colleges.

Students have built sufficient pressure against the practice of internal assessment partly on account of the leakages in the evaluation system and partly on account of hardships experienced in admission to higher courses including courses in the same university.

The additional incentives offered to the colleges seeking autonomy have given rise to more problems within the institutions than any obvious gains in their performance levels. Changes in curriculum teaching methodologies and system of examination in any given knowledge area were a function of the parent department or faculty in the university. This enabled to bring entire teaching community in the subject together to deliberate on issues of significance to the teaching-learning process. Assuming that the subject department or the faculty were sluggish in handling their responsibility as academic leaders, the UGC chose to vest the same responsibility in a relatively smaller group of subject teachers in the college. It does represent one kind of understanding of the principle "small is beautiful"!

The function of energising the co-curricular activity base should, in fact, be thought for all colleges, rather than the autonomous colleges alone. The continuing pressures of increasing enrolment in metropolitan colleges forced college managers to enforce a "shift system" and consequent diversion of resources to expansion of classroom space rather than an integrated development of curricular and co-curricular activities. The pressure of competitive sports discouraged the colleges from supporting a policy of Sports for All. It is not altogether surprising to see college teachers remembering faces rather than names, of their students; in some cases, college Principals found it difficult to distinguish teachers from students. In fact, colleges in small towns and rural areas have created a much wider base of co-curricular activities than the colleges in metropolitan cities. An average student tends to spend much more time per day in rural and small town colleges than colleges in metropolitan cities.

The UGC scheme of Assistance to Autonomous Colleges had stipulated that colleges seeking autonomy would take steps to encourage participation by teachers and students in various extension programmes both in the college and in the community. Surprisingly enough, the UGC had recommended the same for all colleges in its recognition of Extension as the third function of institutions of higher education. It had kept the non-viable colleges out of extension activities for assistance and support. By the end of the Sixth Five Year Plan, it had provided assistance and support to more than 2500 colleges under its Adult and Continuing Education Programme and to more than 1300 colleges under its Population Education Programme. It had, in fact, chosen to recognize Population Education as a co-curricular activity to be planned through a Population Education Club.

It is curious that around the time the UGC began to confer the autonomous status on colleges, it also started reducing support to various extension programmes at the colleges. The Adult and Continuing Education Programme had come to a virtual halt in the colleges by the end of the Seventh Five Year Plan. The UGC's capacity to carry its own mandate of support to extension programmes had shrunk from the envisaged level of Rs. 65 crores to a actual utilization level of Rs. 17 crores in the Seventh Five Year Plan. The main cause for this "capacity shrinkage" was not resource scarcity, but intensifying winds of elitism at the policy planning level and the rapidly fossilizing capacities at the managerial level.

It is an irony of fate that apex institutions which lacked a social face were given the mandate of supporting and overseeing growth in college-community interaction. Elitism in higher education planning receives support not only from those who nurture their own caste and class but by those as well whom they hire for carrying out social justice programmes. Someone should undertake an analysis of professional qualifications and management skills of those personnel who are hired to look after special programmes for extension, for scheduled castes/scheduled tribes, and, for other social justice programmes. The results of such an analysis would be revealing indeed.

The scheme of autonomous colleges represents, in one sense, the search for excellence in higher education. It also legitimizes the growing neglect or responsibility at the university level (faculty or department) to knowledge reforms on the one hand and to the professional growth of teaching community on the other. The chances of any enthusiastic response to the scheme granting autonomy to the colleges continue to be bleak.

Restructuring Undergraduate Courses

The earlier scheme of the University Grants Commission envisaged a restructuring of the first degree programme in a three-year format envisaging founda-

tion courses, core courses and applied courses. However, in the context of the scheme of autonomous colleges, emphasis seems to have shifted from the structural aspects to the nature of courses. The scheme of autonomous colleges envisages social and academic goals for the curriculum. The social goals bring the college in curricular terms in proximity with the community, industry and institutions and in access terms closer to the local student population. The academic goals centre essentially around development of analytical abilities and acquisition of skills.

The 1987-88 Annual Report of the Ministry of Human Resource Development stated that 31 universities had introduced these courses in 117 colleges. In addition, the UGC had set up 24 curriculum Development Centres with a view to reviewing existing curricula, modernising curricula, and developing and preparing new teaching and reading materials. While the number of universities which have accepted the scheme appears to be fairly reasonable, the number of colleges participating in the scheme is very disappointing. It would not be altogether unfair to assume that many of these colleges have abandoned the scheme in view of gross managerial deficiencies in the advocacy of the scheme. Some of these deficiencies are being suggested below:

The traditional organisation of universities is woven round structures known as departments and faculties. It would be difficult to solve jurisdiction problems both with regard to foundation courses and applied courses since no single given faculty or department would have exclusive knowledge or skills within its jurisdiction. Some universities have chosen to overcome this structural constraint by letting the Academic Council legislate for foundation courses or applied courses. Some universities have chosen to operate through *ad hoc* committees created for the purpose. Others have chosen to accept the scheme of restructuring of undergraduate courses in part; applied courses, in such cases, have been incorporated in the traditional three-year degree programme without attention to the larger socio-cultural goals of the scheme.

In addition to an utter lack of managerial sensitivity to the traditional structures for organisation of knowledge in universities and colleges, the UGC have unfortunately failed to see any "affinity of purpose" in their schemes relating to Restructuring of Undergraduate Courses, Continuing Education Programmes, and, Academic Staff Colleges. These have been offered as discrete concept without any structural integration in the institution. This point needs to be elaborated.

In case the undergraduate curriculum is expected to facilitate achievement of academic and social goals, these courses need to be formulated on the basis of felt and perceived educational needs of a given area and its society. A feedback on the felt and perceived needs of society could be obtained both from the planners of Continuing Education Programmes and the Curriculum Development Cells. Such a feedback on the felt and perceived educational needs of a given area and its society could be placed for discussion among teachers

participating in the orientation and training programmes organised by the Academic Staff Colleges in the belief that teachers must plan, teach and evaluate the courses. A structural integration of these units/centres/departments in a given university would thus make it possible to develop a Course Bank alongwith a standing mechanism for the regular monitoring of the progress made in the introduction and management of new courses. Some universities have even felt the need of making the Audio-Visual Research Centre a part of this structurally integrated mechanism within the university. This could be labelled as the Faculty of Educational Planning with constituent units in the form of Department of Continuing Education & Extension, Curriculum Development Cell, Audio-Visual Research Centre, and, the Academic Staff College. Such a faculty should be committed to educational restructuring and innovation both at undergraduate and postgraduate stages.

Management Poverty at Higher Levels

The current practice of the University Grants Commission to offer these innovations as discrete activities has led to a situation wherein these sub-structures have been received in an *ad hoc* manner. These sub-structures work in isolation without establishing any "affinity of purpose" amongst themselves. Each sub-structure had identified its own targets in terms of courses and activities, often in contexts where their own continuity is uncertain.

The Academic Staff Colleges were made to seek justification for their existence in the obligation that teachers seem to have incurred either by virtue of their new pay scales or fresh appointments. The dominant concern is not with the continuing updating of teachers' knowledge and skills in a given knowledge area, but with certification requirements which support upward mobility of teachers or crossing the EB (Efficiency Bar) in the pay scales. It is not altogether surprising that many Academic Staff Colleges in the country have found it difficult to receive acceptance for participation from teachers for the Orientation/Refresher Courses. The UGC chose to keep some on a yearly existence in the last three years; newspaper reports had even spoken of the UGC's intention to close down Academic Staff Colleges. Some attempts are also underway to offer orientation/refresher courses through distance education.

In the absence of any meaningful integration of structures envisaged to engineer reforms in undergraduate education on the one hand and on elitist bias to support few "islands of excellence" in the form of colleges in metropolitan cities, undergraduate education is likely to remain a victim of official apathy both in terms of policy planning and actual implementation. The current emphasis on overcentralization tends to distract attention from the minimum infrastructural needs of a large mass of colleges in the country. The plea for quality education appears to be a poor excuse for deliberate neglect of the large majority of colleges located in small towns and rural areas. The policy planners are probably wait-

ing for organised pressure groups from among students and teachers from these areas.

Innovative Experiments in the field

While managerial poverty continues to be in plenty in higher education both at the levels of UGC and the universities, colleges in small towns and rural areas have undertaken innovative roles in restructuring undergraduate courses and in responding to the development needs of weaker sections in their areas.

Many colleges in the Maharashtra sugar belt have set up 'client-service provide' relationship with sugar mills by providing computer time for maintenance of salary rolls, employees' work attendance records, Provident Fund Accounts. Some other colleges have successfully sought and implemented development projects sponsored by development departments/agencies both in state and central governments. There are colleges which have been able to provide sponsored employment to their students based on knowledge and skills resources available with the institutions on the one hand and through their meaningful interaction with industry and trade in the city on the other.

The UGC should, for a change, sponsor documentation for these innovative efforts within the country rather than be content with sponsoring delegations for the study of community colleges in the United States of America.

Similarly, many colleges have experimented with innovative behaviours both in co-curricular activities and extension activities. One such example should suffice to draw some meaningful inference concerning the nature of responses at the policy planning level.

A meeting of the National Steering Committee on Population Education Programme in India was in the process of hearing reports on work done by college students and teachers in small towns and rural areas. These colleges had organised camps for health check up of rural population, immunization camps for children, awareness for control of diarrhoea, early identification and prevention of disability, and camps for use of terminal and non-terminal methods of family planning. Apart from equipping themselves to better parenthood, these young people had become active participants in the pursuit of national development goals.

The narration had an instant effect on all those present in the meeting, particularly on the officials in the much-maligned Ministry. There was an equally instant recognition and reward. The presiding "deity" proposed that inter-country study tours on an exchange basis with funding from the international agency concerned be made part of the work plan. The intra-country or even intra-state study tours for the college youth would probably have been too poor an incentive!

Curiously enough, right when this proposal was being discussed the University Grants Commission was going through a phase of three-year managerial slumber in the matter of sanctioning funds for Population Education Clubs!

Conclusion

"Elite" groups among educational planners have so far managed to have their way by scoffing at the "populist" pressure for expansion of higher education "as evidenced in the setting up of large number of colleges." Priorities in educational planning have thus been seen in resourcing the already well-resourced colleges through offers of autonomy and other allurements. They have thus committed the democratic state to being a party to support what they consider as "few islands of excellence" while the large majority of institutions continue to starve on account of deliberate neglect. An average lecturer in a small college is forced to cook elsewhere instead of feeling a sense of pride in and commitment to the growth of his/her institution.

The central government had consistently been over generous in allocating funds and other favours to central universities and colleges in large metropolitan towns. The state governments have not altogether been different in this regard. The small town and rural college has had to perforce relate and respond to the local socio-cultural and economic milieu, such colleges have established a more meaningful interaction with the local development scene than their counterparts in metropolitan cities.

The need in higher education should, in fact, be seen in greater democratization of policy and management of behaviours as reflected in resource provision for every institution to enable towards attainment of minimum infrastructure. The need is equally critical in the area of encouraging meaningful structural integration of departments/centres/units available in the universities aimed at more intensive support to undergraduate education. The current tendency to isolate universities from their colleges would only encourage a weak entry base for postgraduate education and research on the one hand and growing irrelevance of higher education from the demands of socio-economic development of the region on the other.

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Autonomous Scheme : Myths and Realities

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George Mathew**

Prologue

The scheme of providing autonomous status to the affiliated colleges in this country has remained more an issue of debate than implementation at the college level, in spite of the fact that the scheme was initiated as early as in 1970s on a selective basis. The scheme was implemented on a larger scale in mid eighties as an outcome of New Education Policy – 1986. Though more than 7500 colleges are functioning under the affiliating system with 148 universities, only 107 colleges are autonomous in seven states. State wise break up of the colleges is : Tamil Nadu – 44, Madhya Pradesh – 29, Andhra Pradesh – 20, Rajasthan – 5, Orissa – 5, Gujarat – 2 and Uttar Pradesh – 2. Though the data reveals that seven states are implementing autonomous scheme, it is only four viz Tamil Nadu, Andhra Pradesh, Orissa and Rajasthan that have implemented the scheme in real sense of the term. In Madhya Pradesh, it is only on paper while the rest of them are in no way near it.

The hesitation to opt for autonomy and its implementation in colleges is attributed to a variety of reasons : The most significant, amongst others, is the very social attitude towards development. Paucity of resources has made educational experts abstain from developing indigenous models through research. This had led the developing countries to adopt and adapt the theories and models that are tested for developed countries. This process has generated both positive and negative experiences. It is those negative experiences that have left bitter feelings and hence stronger impact on the minds of the people. Resultant outcome is resistance to accept any new programme or policy that is already tried in developed countries. It could be either due to ignorance or just the feeling of "play safe". Even academic faculty maintains apprehensions and reservations on similar lines. One such strong apprehension

about autonomous scheme is that, it is a western concept and hence might not suit the Indian conditions. But this assumption is far from reality.

Teaching, learning and evaluation are the trinity of academic functions which is to be carried out by the institutions through the teachers and students, no matter which country it is. This philosophy is universally accepted and the *Acharyas* or *Gurus* of ancient India practised this. In *Guru Ashram* System of Education of ancient times, the '*Guru*' designed the curriculum to be taught depending on the students' needs : both cognitive and affective, and adopted suitable methodologies of teaching and evaluation as well. Anybody who is exposed to the scriptures cannot question the quality of education that was imparted as also the behavioural input that had gone into this process. Philosophy of autonomy actually envisages this concept of freedom, mainly of academic functions. It emphasises the need for greater freedom to teachers to enhance students learning. No doubt it is a challenge to the teacher to be at his best, and to give his very best.

The Purpose

The present article is an illustration of "state of art" of apprehensions about autonomous scheme in India. The article is developed on the basis of authentic data collected from teachers working in autonomous and non-autonomous colleges, field observations and interviews held with implementers and beneficiaries of the system. The purpose of the paper is three fold :

- highlight the findings on teachers' apprehensions in government and private colleges about the autonomous scheme in India;
- understand reasons for such apprehensions in the context of their institutions; and finally
- disseminate the knowledge and findings to facilitate better understanding of autonomous scheme.

It is believed that such a presentation would not only held in understanding the concept of autonomy and the scheme but also assist colleges in having an open mind towards exploring the possibility of implementing autonomy in their respective colleges.

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The Facts

One of the striking findings of the study which was surprising to note from the teachers, students and principals of the colleges was that much of the resistance emerged from sheer ignorance and lack of awareness of

- the very concept of autonomy and the proposed autonomous scheme of UGC; (For details on concept, See Sudha Rao 1990)¹;
- pros and cons of the scheme and its influence on the college and the quality of teaching-learning on the one hand and teachers, students and administrators on the other; and
- demerits of the affiliating system and its impact on the students and in turn society.

India is one of the very few countries of the world where the major part of the higher education is imparted through its affiliated colleges. Though the system of affiliation was copied from London University in 1850s, it was discarded by them long ago. But we still follow the outdated system, and today it has been proved that it has not been able to serve the needs of the society and is also responsible for the state of art of general arts and science courses in the colleges. Our Constitution adopted in 1950 has been changed more than seventy times in the last four decades to suit the changing needs, the monuments constructed in 19th century have undergone physical changes due to the passing of time, if anything remains in the original form in this country, without any change, for about 140 years, it is our affiliating system of colleges.

The affiliated colleges compete with each other for marks and divisions in the university examinations and have concentrated more on the examinations rather than on the achievement of real goals and objectives of higher education. The Academic Council, Board of Studies, Syndicate and Senate which are the major academic bodies of the universities, meet occasionally, discuss the non academic issues as they form the crisis agenda more often than the academic matters. As a result, the universities on an average take around four to eight years to make changes in the syllabus (if at all it is initiated). Postponement of examinations, mass copying and other malpractices have become common practices in the colleges. The conduct of examination has become a major law and order issue in good number of states. Some of the states had to enact laws to make malpractices in examinations as a non-bailable offence, and also at times, it has become unavoidable for the college authorities to seek the help of law enforcing machinery for the fair conduct of examinations. In the affiliating system, syllabus, curriculum (good number of courses have already become obsolete, students rush to enrolment is another indicator of the course quality),

examinations viz. setting of question papers, printing, secrecy maintenance, distribution of question paper to colleges, announcement of examination dates, actual conduction of examination, evaluation of answer sheets, declaration of results, retotalling and re-evaluation, certification and awarding of degrees all these activities are the responsibilities of universities. The teachers who participate as paper setters, invigilators and evaluators of answer sheets get remuneration for these tasks (of course at times get threatened from students as well), are some of the main features of affiliating system. No doubt it also provides equal protection irrespective of different levels of performance of the teachers.

As we know, there are universities having more than 200 colleges affiliated to it. Some of them are at such distances that much of the administrative delays are unavoidable due to physical distance itself. Anything can happen while reaching the question papers and transporting the answer sheets at the time of examination. Incidents of errors in evaluation of large number of answer scripts by teachers, such as over and under estimations, carelessness are reported time and again. Lack of preparation for examination on the part of the university can affect students future. There are incidents of students losing 2 to 3 years due to delays in conduct of examinations. This situation prevents even those colleges with better resources and determinations from improving the quality and achieving their objectives. This makes affiliating system a status-quo and stagnating one, and thus society has started raising questions against the very purpose of higher education itself. Moreover, affiliating system has made the colleges mere implementers of the decisions taken by the university without participating in the decision making process.

Well, if these are the negative tones to affiliation, there are positive (if it is viewed as such) ones as well. Colleges get recognised in the name of the university. Responsibilities remain with the university for all the decisions, except teaching in the classes and hence the faculty remains in the shadow of the university. But the risk lies in the image. Individual faculty or college, irrespective of their performance (good or bad) will be identified by the image of the university.

The Realities

The history of higher education in modern India starts with the history of autonomy. The colleges were established in the British provinces before the establishment of Universities of Calcutta, Bombay and Madras in 1857. The Hindu College was founded in 1816, Poona College in 1821, Agra College in 1827, Elephinstone College in Bombay in 1827, Hoogly College in 1836, Benthune College for women in Calcutta in 1849 and Madras College in 1852.² These Colleges designed their own rules for admission of students,

prescribed courses, conducted the examinations and declared the results. These institutions were later affiliated to the three universities in 1857, and some of the functions performed by the colleges were taken over by the universities and it is these universities that were declared autonomous later.

Autonomy to colleges is suggested as an alternative model to the age old practice of affiliating system. The importance of introducing the autonomous scheme has been emphasised by several commissions and committees: Kothari Commission (1964-66),³ UGC Committee (1966-67),⁴ Gajendragadkar Committee (1969-71),⁵ Central Advisory Board of Education (1977),⁶ and Jaikrishana Committee of (1974),⁷ are the few amongst many.

The affiliating system gives no specific identity to a college while autonomy is based on the individual identity and recognition to the college. Autonomy emphasises the principle of "smaller the unit, better the management and in turn better the quality". Underlying the whole concept is the principle of decentralisation for effective implementation. Under autonomy the college takes decision through committees constituted by the college itself for the purposes of achieving the specified goals and gets it implemented too.

The Attempt

A quick survey was conducted on teachers working in autonomous colleges in three states viz. Tamil Nadu, Andhra Pradesh and Rajasthan. Questionnaires were administered to 443 teachers to know their awareness, apprehensions and understanding of the autonomous scheme. The data revealed the following.

Table indicating the statewide sample of teachers and the percentage aware of autonomous scheme.

Table 1 – Teachers' Awareness of Autonomous Scheme

State	Number of Teachers		Percentage of Teachers	
	(Total Sample)		Aware of aims and objectives	Not aware of aims and objectives
		%age		
Andhra Pradesh	105	23.76	82.91	17.09
Tamil Nadu	254	57.47	98.77	1.23
Rajasthan	84	18.77	58.07	41.93
Total	443	100.00		

The figures indicate that even amongst those teachers who have been working under the scheme for more than four years, are also some teachers who are not sure of the aims and objectives of autonomous scheme. It became obvious with the teachers response

to one of the queries - "Are you clear with the aims & objectives"? We can notice that 82.91 percent from Andhra Pradesh, 98.77 percent from Tamil Nadu and 58.07 percent from Rajasthan are aware of the aims and objectives. In other words, 17.09 percent teachers from Andhra Pradesh, 1.23 percent from Tamil Nadu and 41.93 percent from Rajasthan, who are working in autonomous colleges, are not clear about the aims and objectives of autonomy. This finding supports the assumption stated earlier that the resistance for the autonomous scheme originates from the teachers' apprehensions, and that too, not based on the proper understanding and analysis of the scheme.

The responses to the query on different aspects revealed that teachers hold different opinions and perceptions towards autonomy and these responses attain greater significance when their background is also taken into consideration. These teachers are those who have worked under the affiliating system, for several years before entering into autonomous system and are now working in autonomous system for quite some time.

It is obvious from the findings that autonomy has been able to promote introduction of changes, more so, in the area of restructuring of curriculum. Teachers are given both power and freedom to restructure the courses because it is known that autonomous system cannot function without involving teachers in college administration and decision making. With these it is expected that it promotes accountability as well. Restructuring of courses necessitates introduction of changes in teaching methods and evaluation. Internal assessment, project work, semester system, etc. are some of the methods tried in these autonomous colleges. Through project work students have been able to use their talent and energies for creative activities. Semester system is expected to introduce discipline in students and keep them busy with the academic matters and thus promote quality. All these would obviously encourage better interaction between the teachers and students. Table below reveals the actual responses of the teachers on various issues :

Table 2 – Teachers' Perception of Advantages of the Autonomous Scheme

Statement	A.P. (%)	T.N. (%)	Rajas- than (%)	Total (%)
1. Autonomy promotes Accountability	69.02	77.08	62.87	72.5
2. Autonomy promotes more freedom in developing new methods of teaching	79.97	88.04	60.20	80.9

3. Autonomy promotes recognition of teachers and college	74.07	78.82	58.07	73.8
4. Autonomy promotes better interaction of teachers and students	75.76	84.57	54.34	76.8

Responses are in percentage of teachers who "agreed" with the statements made.

The data above provides for hope in higher education quality improvements through autonomous colleges. It is evident that even in Rajasthan where only government colleges are made autonomous, more than 50 percent of teachers have responded in a positive manner. Though autonomy is advocated as an alternative to the affiliating system it is not the panacea for all evils in higher education. The good or bad again depends much on the people within the system.

Autonomous scheme is also not free from criticisms. Some of the apprehensions against the scheme are : "autonomous colleges will promote elitism", "autonomy will be misused by colleges for corruption in admission and evaluation", "teachers and students will be victimised", "administrators will use their power arbitrarily to penalise the staff" and "teachers service conditions will be affected". Keeping these criticism in view queries were raised and the responses are tabulated below :

Table 3 – Teachers' Perception of the Adverse Effects of the Autonomous Scheme

Statement	A.P. (% age)	T.N. (% age)	Rajas- than (%age)	Total (% age)
1. Autonomy creates job insecurity.	27.78	21.58	35.16	25.6 (74.4)
2. Promotes exercise of power over students	35.36	40.54	36.20	38.5 (61.5)
3. Promotes malpractices in examination	12.21	25.23	35.16	24.0 (76.0)
4. Promotes malpractices in administration	17.26	26.28	38.36	26.4 (73.6)

Responses are in percentage of teachers who "agreed" to the statements. Figure in parenthesis pertain to teachers who "did not agree" to the statements.

It is interesting to note that only 25.6 percent of the total respondents felt that autonomy creates job insecurity while the rest of them felt that it is no way affects the job (74.4). Surprisingly, the teachers seem to have ignored taking note of the UGC guidelines item (12.ii(a)) which clearly states that "the employees (both teaching and non teaching) of a college on conferment

of autonomous status will continue to be governed by the same terms and conditions of service as on the date of conferment of autonomous status".⁸ The study reveals that the anxiety of the teachers towards job security is not based on authentic facts but on lack of awareness among the teaching community about the scheme and its merits & demerits. As regards the criticism, promoting exercise of power over students, 38.5 percent of teachers felt that it might do so but 61.5 percent did not agree. Similarly, as regards malpractices in examination and administration it is only 24 and 26.4 percent of teachers who agreed with statement whereas those who did not agree is 76 and 73.6 percent respectively. If we look at Table – 1 and Table – 3 together, we could only see the impact of one on the other.

With regard to autonomy promoting elitism, well, one needs to define the word elitism in the context of autonomous colleges. Whether we are referring to the accessibility to only richer students, or the institution becoming elite or the products becoming elite? However with regard to admission malpractices, affiliation system is no exception to this. Admission policy of autonomous colleges is to a great extent, guided by the existing regulations of the state government norms and the university norms. It has to respect the reservation policy of the state government and each college has to constitute its own admission committee and formulate guidelines.

Similarly credibility of autonomous college depends on the kind of evaluation system it adopts. Any malpractices, continued for long, places the credibility of institution at stake and once the institution loses its credibility, it is bound to die its own death. Society would accredit these colleges with the layman's criteria, and students will hesitate to enter such colleges and get degrees from them as it may not help them in building their career. These degrees and certificates are hardly of much use under the present challenges posed by the employment sector and also entry methods adopted by institutions of higher learning. They have started conducting their own entrance examinations to assess the competence of products developed at undergraduate level.

Epilogue

Of the total sample, 57.47 percent of the respondents are from Tamil Nadu. And amongst them 98.77 percent have favourable perceptions. It is to be noted that Tamil Nadu is the first state which implemented the autonomous scheme and have the largest number of colleges and the views of the teachers have withstood the test of decades of experience.

However, the experienced teachers from autonomous colleges have following secrets to reveals. Autonomy supports teachers freedom, will not affect any service conditions or it does not increase the working hours beyond the 40 hours per week specified by UGC. Powers of the management, depend on the representation of teachers in various bodies, viz. the Governing Body, Academic Council, Board of Studies, Examination Committees and so on. In other words, "Who" are the representatives and "How Many" and "How Effective" they are. Yes all these, provided teachers are conscientious and ready to be accountable to the teaching profession.

Autonomy is not a licence to a college to do anything it wants. The parent university has its role and responsibility at each stage of the process. The committees constituted (Governing Body, Academic Council, Board of Studies and others) in an autonomous college have representatives of university and the state government and UGC. These representatives are empowered to exercise their powers in decision making in the concerned bodies. Autonomy is not conferred for ever. It is initially for five years and can be extended after reviewing the performance. The parent university can revoke autonomy at any time, if found detrimental to the academic interest. As the country is moving towards

more liberalised and open system, let the college education system also be permitted to face the challenges.

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Rationalisation of Periodical Subscriptions

N. Laxman Rao*
T.V. Prafulla Chandra**

Introduction

Information is regarded as the sixth basic need of human beings. They get information both from formal and informal sources. Among formal sources, library and information centres (LICs) occupy a prominent and significant place in the dissemination of information. The growth and prosperity of any country depends on the importance accorded to research and development activities. For research and development, information is a crucial input.

LICs are established to provide nascent micro thought. As Dr. S.R. Ranganathan has rightly pointed out the main function of LICs is to provide pinpointed, exhaustive and expeditious micro thought. LICs strive to procure latest information and provide it to users to enable them to accelerate research. LICs, particularly those based in universities and specialised R & D units, are spending huge amounts for the subscription of periodicals, mostly those published from foreign countries.

Financial Crisis

In the past, a considerable number of librarians, particularly those working in R & D units and special libraries, operated mostly within the confines of their respective LICs building up huge collections oblivious of the expenditure incurred as the flow of funds was considerable. In the process, cooperation with other LICs to satisfy the demands of users was not given adequate attention.

Faced with budget crunch, the LICs can no longer afford to work in isolation. Inter-library cooperation is an imperative need in the present environment characterised by financial crisis, low purchase value of the rupee in comparison with foreign currencies such as U.S. Dollar, British Pound and Deutsche Mark, and escalation of subscription rates.

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Service-Oriented Approach

The present situation demands adoption of innovative approaches by librarians and a certain degree of understanding by the users. Dr. A. Lahiri, Joint Adviser, National Information System for Science and Technology (NISSAT), an organisation of the Department of Science and Technology, Government of India, strongly feels that LICs should adopt a service-oriented approach which involves the following (*NISSAT Newsletter*, 11:2, 1992):

- The suppliers (librarians) should know what the consumers (readers) want.
- The suppliers should explore alternative ways of meeting demands.
- The supply of information can be made from any source and not necessarily from the holdings of one's own library.
- Consumers should articulate their requirements keeping in mind the real-world situation and they should be prepared to bear certain inconveniences.

Impact of Rising Prices

According to NISSAT estimates, the cost of scientific and technological periodicals is increasing at the rate of 15-20 percent annually. In addition to this, since January 1992, there has been a rise of more than 30 percent in the rate of foreign exchange conversion. Table 1 shows the increase in the rate of foreign exchange conversion between 1988 and 1992.

Table 1 : Increase in Conversion Rates of Foreign Currencies

	Rate in Rupees*	
	July 1988	July 1992
British Pound	Rs. 26.10	Rs. 59.70
U.S. Dollar	Rs. 14.30	Rs. 31.90

* (Note : Recommended by Good Offices Committee)

Similarly, the annual subscription rates for periodicals have increased tremendously as the following examples taken from the Osmania University Library reveal.

Table 2 : Escalation of Periodical Subscription Rates

Title of the Periodical	Annual Subscription Rate	
	1988	1992
1. Cell	Rs. 3836 (\$280)	Rs. 9486 (\$365)
2. Journal of Fish Biology	Rs. 6486 (\$470)	Rs. 18216 (\$623)
3. Journal of Psychology	Rs. 1644 (\$120)	Rs. 6344 (\$210)
4. Journal of the American Statistical Association	Rs. 1164 (\$88)	Rs. 4833 (\$160)
5. Faraday Transactions	Rs. 7103 (£283)	Rs. 32720 (£678)
6. Perkin Transactions	Rs. 9964 (£394)	Rs. 29197 (£605)
7. Biological Abstracts	Rs. 64960 (\$4950)	Rs. 1,75,346 (\$6750)
8. Library and Information Science Abstracts	Rs. 4551 (£205)	Rs. 13721 (£293)

Note: The figures shown in Rupees are the actual amounts paid by the Osmania University Library.

Inflation had a negative impact on periodical subscriptions in university libraries. For example, in the Osmania University Library, the expenditure for periodical subscriptions has increased from Rs. 9 lakhs (actual budget provision Rs. 6.5 lakhs) in 1988 to Rs. 16 lakhs (actual budget provision Rs. 14.52 lakhs) in 1992. In spite of this, the number of foreign periodicals subscribed has been reduced from 321 to 252, that is, a reduction of 21.5 percent. This is not an isolated example. The same situation is more or less prevailing in other Indian academic and special libraries too.

The developed countries are also facing a similar problem, maybe with less intensity. The Document Supply Centre of The British Library at Boston Spa is an international resource centre for loans and supply of photocopies of documents. It has been asked to save a quarter of a million pounds of its periodicals acquisition budget in 1992. To achieve this, it proposes to identify titles which have not been lent or photocopied in the past three years to enable stoppage of renewal of their subscriptions. It has been reported in the *Times Higher Education Supplement* (7 Aug. 1992, p.11) that so far out of a total of 52,000 current subscriptions, it has identified 16,000 titles for cancellation.

Resource Sharing – An Imperative Need

Why resource sharing is a must? In the present times, the LICs cannot work in isolation. No LIC can claim that it can meet all the information needs of its users from its own collection. Resource sharing is a must in view of the following factors :

- The imperative need to satisfy the growing information needs of user. The researchers are venturing into newer, multi-disciplinary fields and they demand and need access to more number of periodicals.
- Most of the LICs such as those based in universities and R & D units are run on public funds. We cannot afford to waste public funds. To make optimum utilisation of resources, which is both a social obligation and a national necessity, we have to share our library resources with those of the neighbouring institutions. In this task, the heads of institutions and administrators have an obligation to initiate, plan and implement rationalisation.
- The need to save precious foreign exchange and economise in expenditure in view of the country's heavy indebtedness.
- The inability of most of the LICs to increase their budgets continuously, such as for example by 50 percent in 1992 to meet the increasing cost of periodical subscriptions.

Rationalisation of Periodical Acquisitions – A Pragmatic Solution

Rationalisation of periodical subscriptions and organised resource sharing may offer a possible pragmatic solution to the present crisis in LICs. In this, heads of institutions and librarians of local institutions meet and review periodical subscriptions. After detailed examination of duplication of periodical subscriptions, they identify the core and essential journals which each library should subscribe. Duplication of the periodical subscriptions should be eliminated to the maximum extent possible. Finally, methods to be adopted for resource sharing such as exchange of photocopies of contents pages, supply of photocopies of periodical articles, circulation of periodicals, etc. are explored. It is needless to say that the success of this concept depends on the coordination, cooperation and contribution of participating LICs. It is essential that the users of LICs are taken into confidence for rationalisa-

tion of periodicals and they should be convinced of the grave financial crisis and need for rationalisation.

A NISSAT study done in 1990 among 12 major libraries of Calcutta revealed that there was duplication in case of 203 periodical titles out of a total of 499 periodicals subscribed by these libraries involving an expenditure of Rs. 37,44,825. The same study estimated an overlap of Rs 6 million during current year. Through careful rationalisation of periodical subscriptions, a major portion of this expenditure can be avoided.

Contribution of NISSAT

NISSAT has made commendable contribution in the area of rationalisation of periodical subscriptions and resource sharing. It has promoted formation of Consultative Committees in 16 major cities, namely, Ahmedabad, Bangalore, Bombay, Calcutta, Delhi, Lucknow, Mysore, Nagpur, Pune, Trivandrum, Bhopal, Chandigarh, Cochin, Hyderabad, Kanpur and Visakhapatnam. Already the contact points of Consultative Committees have been established in ten cities and in the rest they are being explored. Through these Consultative Committees, librarians in each city are brought together for discussion and understanding on their acquisition policies particularly those relating to periodical subscriptions. They are expected to examine the scope for resource sharing, minimising duplication of periodical subscriptions among local LICs. Such an interaction, it is hoped, would result in rationalisation of periodical subscriptions eliminating duplication to the extent possible thereby effecting considerable savings in library budgets and outflow of foreign exchange. According to NISSAT, during 1991 subscription year Rs. 29.9 lakhs were saved through rationalisation of periodical subscriptions among cooperating libraries.

Due to the initiative and deliberations of the Consultative Committees operating in various cities, steps are being taken to identify the extent of duplication of periodical subscriptions and achieve Rationalisation of periodical subscriptions. Union catalogues of periodicals subscribed by local LICs are also being compiled to facilitate rationalisation and resource sharing.

The Osmania Initiative

In Hyderabad, it has been estimated that the rate of duplication of periodical subscriptions in major Hyderabad libraries (numbering about 30) was about 30 percent during 1990. Due to duplication, two and half times (about Rs. 50 lakhs) of the original cost (about Rs. 20 lakhs) of periodicals is being spent. This estimate is

based on the study of periodicals whose annual subscription is Rs. 5000 and above.

Every fifth periodical subscribed by libraries in Osmania University campus area is available within a radius of 3 kms. A study done by E. Rama Reddy, K. Nagaraja Rao and Md Burhanuddin of the University of Hyderabad revealed that the duplication of periodical subscriptions between Osmania University Library and the University of Hyderabad Library was 170 titles during 1990.

Concerned at the present grave situations the Department of Library and Information Science, Osmania University, took the initiative and organised a meeting of librarians/heads of LICs on 30 September 1992 to work out strategies for rationalisation of periodical subscriptions and resource sharing.

Dr. A. Lahiri and Prof. Malla Reddy, Vice-Chancellor of Osmania University, who attended this meeting whole-heartedly supported and encouraged the idea and promised to provide all the necessary support. Prof. Reddy asked the librarians to come out with specific proposals after their deliberations and assured that this issue would be taken up at higher level (institutional level) subsequently.

The participating librarians accepted the idea of rationalisation of periodical subscriptions and resource sharing in principle and felt that concrete results could be achieved only when such proposals receive acceptance and support of administrators and users of participating institutions.

In the above meeting, the problems were discussed at length under guidance of Dr. Lahiri. The following two decisions were taken :

- i) To look into rationalisation of periodical subscriptions and plan for its implementation from 1993 subscriptions.
- ii) To prepare a project report for Hyderabad Library Network (HYLIBNET) and submit it to the Government of India through NISSAT for possible funding.

For the implementation of rationalisation of periodical subscriptions, a Core Group was formed with the following six Sub-Groups :

- i) Humanities
- ii) Social Sciences

- iii) Agriculture and Life Sciences
- iv) Engineering, Defence and Technology
- v) Physical and Chemical Sciences
- vi) Management Science

The Core Group is chaired by Mr. L.J. Haravu, Manager, Library and Documentation Services, ICRISSAT and each Sub-Group has a convenor from the concerned subject library. As for rationalisation, it was decided that the convenor of each Sub-Group should come out with concrete proposals for rationalisation among libraries of the concerned subject by the first week of November 1992 to enable implementation w.e.f. 1993 subscriptions. The Core Group met on 9 October 1992 and chalked down the programme of action. It was felt that there is a need for a meeting of heads of institutions to prepare a policy paper. The Core Group also suggested to have free exchange of content pages of periodicals among the libraries subject to institutional limitations.

The Core Group also decided to act as Core Working Group for HYLIBNET by coopting specialists from computer science and telecommunication fields. This network supports access to catalogues of other libraries, both within and outside the Hyderabad city. It was felt that the present available infrastructure such as NICNET, INDONET, GPSS (of VSNL) can be effectively utilised for information retrieval and to get access to the other networks.

Suggestions

To achieve rationalisation of periodical subscriptions and to facilitate resource sharing among local LICs the following suggestions may be considered:

- 1) A Standing Committee of heads of participating institutions has to be formed for getting support and administrative sanction and to prepare policy statement on rationalisation of periodical subscriptions and resource sharing.
- 2) In view of its large size and central location, the Osmania University can be entrusted with the responsibility of providing leadership and institutional support for resource sharing. For this purpose, a clearing house or a documentation centre should be established at the Osmania University Library. This has to be planned involving all the participating institutions. Such a centre

would supplement and complement the information needs of users of the participating institutions.

This clearing house or documentation centre receives content pages of periodicals from the participating libraries and after cummulation, it circulates them to all of them at regular intervals. On the basis of users' demands for individual articles, it procures them from the concerned LICs and supplies them to the users against payment. It should be staffed with dynamic and committed professionals and provided with necessary infrastructure facilities such as photocopying machine, micro computers, baby off-set machine, telephone, etc. In course of time, this centre can take up other programmes such as CD-ROM search, on-line search, etc. and form the focal point for the proposed HYLIBET.

- 3) The students, research scholars and teachers of postgraduate centre affiliated to the Osmania University, located both in Hyderabad and outside, are denied access to periodical literature. Moreover, there is no coordination between the Osmania University Library and postgraduate centres in periodical acquisitions. Steps should be taken to establish proper linkages between them so that users located at the postgraduate centres gain access to periodical literature. Postgraduate centres should also form part of the proposed HYLIBNET.

- 4) The participating libraries should operate with a sense of cooperation and coordination.

- 5) We cannot avoid all duplication of periodical subscriptions. Subscription of certain periodical titles may be inevitable because of institutional needs/objectives/special requirements. Each institution has to identify its core journals and the rest of the titles have to be decided in consultation and coordination with participating libraries. For this, the librarians of the participating libraries should identify the titles to be discontinued. Then, these plans for rationalisation should be presented to the heads of institutions for their evaluation and acceptance.

There is no doubt that rationalisation would affect the users and put them to some inconvenience. The users should understand the prevailing situation and cooperate with the LICs. In fact, in course of time they are likely to derive maximum benefit as they will have greater access to all the documentary sources available in major local libraries, made possible through resource sharing. Resource sharing would be a major step towards breaking institutional barriers in the free flow of information and sharing of knowledge.

Pursuit of Excellence

Sri P. Rangarajan Kumaramangalam, Minister of State for Science and Technology, Ocean Development, Electronics and Parliamentary Affairs, Govt. of India, delivered the Convocation Address at the ninth annual convocation of the Bharathiar University, Coimbatore. He said, "The pursuit of excellence does not necessarily mean achieving perfectionism. Nobody is perfect and for that matter nothing is perfect. Search for excellence only implies operating at the very frontier of one's abilities and constantly trying to further extend this frontier. We all know that human intelligence operates at a level far below its total capacity. All our energies should be harnessed to expand our intellect. This cannot be a one time limited exercise. It has to be inculcated as an attitude of mind, a permanent endeavour." Excerpts

We all know that the education has spread fast to the nooks and corners of the world – thanks to the technological growth in the field of communication, which has compressed the world to a global village. We all know that the science is progressing at a breakneck speed overcoming barriers after barriers, exploring new frontiers every moment. We all know that the rate of technological obsolescence has reached a stage where in many areas technology becomes obsolete the moment it is mastered. We all know the influence which the education, science & technology exercise in the context of human affairs. In fact, it is widely believed that in the modern world technology is the panacea for all the problems faced by the mankind. But today, I am forced to pause and think that if it were really so, then the world should have already been relieved of all the miseries. It should have reached the stage where there was complete fulfilment of the basic needs of every person – whether poor or rich, whether weak or strong, whether low or high. It should have reached the stage where there was little conflict of interests. But what we witness today is a striking contrast to this rosy picture. The world is in a turmoil. Whether you see the political or the economic or the social fields, the strain which the new international order is experiencing

is self-evident. New national identities are being forged leaving behind the train of bloodshed and animosity. Prolonged starvation is forcing a large number of people to fight a losing battle against the ever increasing pangs of hunger. The vacant eyes peeping out of a lifeless pale face of a starved body has a long tale of misery to narrate. Human lives are being sacrificed mercilessly on the altar of dogmatic social, political and religious ideologies. When there is so much of progress in education and science & technology, why has the world come to such a pass? It is this question which has been gnawing at my mind.

One cannot but wonder whether our education system has really been able to bring out the best in human intelligence? Does it really address itself to the whole of the human intelligence or is it only embellishing certain faculties of mind. Apparently, the emphasis today is largely on the ability to recall and reproduce. The spirit of enquiry, the scientific temper, the ability to analyse all have to be developed simultaneously. Only such an education system, to my mind, could give a student the discretion to judge and choose the best option. In fact it is this lack of emphasis on scientific temper which has allowed a thought

process to gain ground that there are certain feelings on which human rationality cannot have any control; that there are certain aspects of human behaviour which would not listen to the voice of reason and over the years the voice of reason has been effectively silenced, in those aspects from the human lives. My plea to you all is to see that this voice of reason is acknowledged, heard and acted upon. The late Prime Minister Pt. Jawaharlal Nehru had been uniformly making an impassioned appeal for developing scientific temper in the country. I have a feeling that the appeal for scientific temper was not merely a reflection of his urge or desire to build a modern India on scientific foundation, it was the vision of the great statesman who knew that our country, which boasted of unity in its diversity, can sustain this in the face of onslaught of divisive forces only through reason and scientific temper.

In a great country like ours, which has numerous religions, castes, cultures and life styles, the abiding binding force has always been the temperance, the tolerance and the assimilative ability to synthesize various cultures and religious life styles under one umbrella of Indian Nation. Pt. Jawaharlal Nehru talked of scientific temper because he wanted to give a permanent scientific base of the natural genius of Indian Nation to assimilate and absorb. He wanted to work towards a society where the scientific temper and spirit of tolerance allowed the co-existence of these diverse elements. The nation has enshrined these noble ideals in the Constitution itself.

When you go out in the world to start a life of your own, I would like you to bear in mind that along with building your own life, you also work for the noble task of nation building. And this can only be achieved by working in an atmosphere of conflict resolution and not conflict creation. You have to work for fusion and not for fission. You have to work

for integration and not for disintegration. My appeal for scientific temper does not militate against any religion, sentiment or belief. My only aim is to highlight the fact that rational approach recognises that in any situation, there are bound to be many areas of agreement alongwith the areas of conflict and the good lesson in the life is to identify areas of agreement and bring the forces together on that area so that all differences are unitedly thrashed out in a spirit of give and take.

The world today has become extremely competitive. For every job, for every post, for every niche, for every market there is very fierce competition. Competition means conflicts and what would conflict imply if not viewed with scientific temper? An unscientific mind always has a temptation to explain away the failures by easy excuses like non-cooperation, discrimination, arbitrariness, misfortune and so on. The crux of the matter is that excellence is always recognised in any environment. Even if one door is closed to you arbitrarily, if you have the mettle you will find many other openings. The scientific temper tells you that failure is not the end of the world, it is only the beginning of the quest.

In this fiercely competitive world, persistent pursuit of excellence is your only guarantee of success. This alone could keep you high above the alleged forces of discrimination, arbitrariness and injustice. This may look like a tall order which it is certainly not. The pursuit of excellence does not necessarily mean achieving perfectionism. Nobody is perfect and for that matter nothing is perfect. Search for excellence only implies operating at the very frontier of one's abilities and constantly trying to further extend this frontier. We all know that human intelligence operates at a level far below its total capacity. All our energies should be harnessed to expand our intellect. This cannot be a one time limited exercise. It has to be inculcated as

an attitude of mind, a permanent endeavour. There should be no room for gloom or frustration in your life. There is vast potentiality as well as opportunity for you to exploit provided you have the perseverance.

The ability to achieve comes from the ability to take challenges with grit and determination and accept failures, if any, as a temporary set back. There are people who feel that ambition is dangerous; that it is one of the baser feelings of human mind which needs to be curbed. I, on the other hand, find that it is ambition alone which has made it possible to achieve whatever achievements this world has witnessed ever since its inception. Perhaps there is a need to distinguish between the constructive and unbridled ambitions. The bloodiest of wars, mass destruction of human lives, rape of natural resources, exploitation of man by man have all been due to unbridled ambition. Every irrational human behaviour seeks to attain its objectives through short cuts, deceit and manipulation and in this process the ethos, the values of the society are all sacrificed. Constructive ambition, on the other hand, generates an urge for creativity, an urge to contribute positively to the society, an urge to do the nation pride.

Sometimes there may be temptation to allow short run self interest to override the national interest. But if seen positively, there is a similarity of interest between the bright future of your generation and bright future of our nation. No man is an island. Your excellence, your achievement, your prosperity, your well-being can give real contentment if it is in the context of a nation which is progressing well and is at peace with itself. Therefore, I have no hesitation in saying that for your success, for your future and for the country, it is essential that you tread the path of truthfulness, honesty and discipline.

Lord Buddha, Mahatma Gandhi have all implored us to be truthful. The motto of our country is "*Satya Meva Jayate*" – "Truth alone Triumphs". Truth is not only not telling of lies, it is much more than this. According to Mahatma Gandhi, "Truthfulness, to my mind is an attribute of human character. It is a way of life. It trains mind to approach everything in life with a sense of integrity and honesty".

In fact His Excellency the Governor of Tamil Nadu is a noted Gandhian and can do better justice to bring out the great esteem in which Mahatma Gandhi had held this mother of all virtues. But I may add that this nation had been built on the gospel of truth. Any digression from the path shown by the founder-father of this nation would imply weakening of the very foundations of the nation. And, dear friends, no superstructure with weak foundation can last long.

I will like to dwell at some length on the question of discipline also. Discipline itself lays down a code of conduct for the life. It harnesses the benefits of all the other virtues. We have to pause and think as to why some other countries which are similarly placed as our's in this extremely competitive world, have been more successful. Illustration of the countries like Taiwan, Korea, Singapore and Malaysia is before us. In fact even China, despite the fact that it has a more rigid structure, has become a force to reckon with in the world market. In the economic field these countries have stolen a march over us perhaps for the single most important reason of discipline followed by them. In fact we all know how well the Indians work in foreign environment. It is not that the ability of Indians working abroad is very much higher than that of their brethren here. It is only due to the fact that a better disciplined environment harnesses their potentiality to the optimal level. Therefore, if, in the comity of nations, India has to have a place of pride,

the youth have to rediscover the indispensability of discipline.

Dear friends, our country has won its freedom after centuries of servility with great effort. Thousands of patriots laid their lives to see India free. Millions of them underwent worst possible agonies of the alien ruler's tyranny. Sacrifice of those thousands and thousands of Indians has given us this freedom and a new future to the nation. Future of India which Mahatma Gandhi dreamt of; future of India lovingly nurtured by Pt. Jawaharlal Nehru is today in the hands of your generation. You have to decide as to how the noble task of building our nation brick by brick is to be carried further. It is for you to decide whether you have to suc-

cumb to unscientific irrational behaviour and sacrifice our nation on the altar of narrow sectarian thoughts or you have to see India a strong, self-reliant and proud nation. In short, you have to decide whether you want to build India with the spirit of scientific temper, truthfulness, sincerity and discipline or let communal, parochial, reactionary forces poison the nation to death.

My faith in the wealth and strength of the country is infinite. Therefore I call upon you to carry the task of nation building on scientific lines so that our society is free from all conflicts, strains and fissures. It was easier to consolidate the post-Independent fragmented India. But it is much more difficult to bridge the

emotional gulf created by sectarian and unscientific prejudices. Posterity always owe a debt to the present. We too owe a debt to our forefathers who shed their lives to make us free citizens.

Most appropriate way to repay this debt is by fulfilling their dream of building a united and strong Indian nation. I can do no better than to conclude my address by quoting Pt. Jawaharlal Nehru "I have loved India and sought to serve her not because of her geographical magnitude, not even because she was great in the past, but because of my faith in her today and my belief that she will stand for truth and freedom and the higher things of life".

STRUCTURAL STEEL HANDBOOK

FOR IS:226 and IS:2062 STEELS

B.N. Sridhara, Managing Director of Space-Tech Private Limited, Consulting Engineers, Bangalore and Technical advisor to the Torsteel Research Foundation in India.

The Bureau of Indian standards revised the code of practice IS:800-1962 and published the revised code IS:800-1984 (second revision) under the new title code of practice for General Construction in Steel. As a result of the significant changes, the Torsteel Research Foundation in India felt that there was an immediate need for a structural Steel Handbook based on the revised code. The handbook gives permissible stresses and safe loads for beams, built-up beams, plate girders, joist and channel columns and single and double angle ties and struts, calculated in accordance with the requirements of the revised code. All units are in S.I. as recommended in the code. Also, safe loads for framed beam connections and seated beam connections have been tabulated. Coefficients for the design of weld groups have been given with worked examples on the use of tables. This handbook will be an invaluable reference to designers, engineers, architects, structural consultants and students of structural engineering.



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Reorganising Undergraduate Courses

Introduction of vocational courses and enhanced use of the electronic media for imparting education were among the steps being taken by the University Grants Commission (UGC) to reorganise the undergraduate degree structure, said the UGC Vice-Chairman, Prof. S.K. Khanna. The vocational courses will include electronics and computer sciences.

The changes would be introduced in about six months in universities which accepted the proposals. The UGC would provide financial assistance to set up the infrastructure. "If adopted, this will change the complexion of the first degree education in the country," Mr. Khanna said. He was speaking at a function organised by the Madras University at the Dr. A.L. Mudaliar PG Institute of Basic Medical Sciences, Taramani.

Networking of the universities was also being considered, so that students could share the best expertise available, Prof. Khanna said. Information technologies would be put to optimum use. Distance education, through the electronic media, would supplement the formal classroom education. This would also bring down the expenditure on higher education to some extent.

The education sector has been growing at the rate of about five percent, he said and added that the participation of private sector was imperative as UGC alone could not bear the entire cost of education.

Dr. P.K. Sen, member, UGC, said Madras University was among the first to introduce the semester system, which it later abandoned. The UGC was studying the reasons for the failure of the system.

The Tamil Nadu Education Minister, Mr. C. Aranganayagam, who presided, said universities should undertake socially relevant research projects which would provide solutions to problems faced by the country in different spheres. Courses offered by universities should be restructured and made job-oriented. The State Government would take steps to implement any suggestion of the UGC in this regard.

The Vice-Chancellor of Madras University, Prof. S. Sathikh, welcoming the gathering, said the university would receive Rs. 1.55 crores during the Eighth Plan towards its development.

The Director of the PG Institute, Dr. S.P. Tyagarajan, said the Institute undertook research projects in basic and applied sciences and was collaborating with countries such as the U.S. and the U.K. on some research projects.

Higher Allocation for Education

The allocation for the education sector has been raised by 37.6 percent from Rs. 952 crore to Rs. 1310 crore in Union Budget for 1993-94. Following are the extracts from the speech the Union Finance Minister, Dr. Manmohan Singh delivered in the Lok Sabha while presenting the budget for 1993-94.

"The development of human resources is given high priority in the Eighth Plan; Hon'ble Members are also aware that education is an area which is very close to my heart. I am, therefore, particularly happy to announce that the outlay for education is being increased from Rs 952 crore to Rs 1310 crore, which is a step up

of 37.6 percent. Universal provision of primary education and adult literacy of satisfactory quality, particularly for girls and women, is a pre-requisite for the modernisation of the economy and the society. I am happy to inform Honourable Members that our total literacy campaigns are breaking new grounds, and are now being implemented in 192 districts covering approximately 430 lakh adult learners. A new scheme is being launched for the improvement of primary education in educationally backward districts and in districts where the total literacy campaigns have been successful, leading to an enhanced demand for primary education. In these districts, districts specific and population specific plans for achieving universalisation of elementary education are being prepared. Twenty to 25 districts out of about 200 educationally backward districts where female literacy is below national average, will be taken up for preparation of districts plans in 1993-94. In the sphere of higher and technical education, modernization and upgradation would receive high priority. Keeping in view the aspirations of the North-Eastern region, the government has decided to set-up a university in Nagaland and an Indian Institute of Technology in Assam".

Varsity Education in the New Eco Policy

The service conditions of teachers and the selection of students should lay due emphasis on the search for excellence, said Mr. C. Subramaniam, former Maharashtra Governor in Madras while speaking at a seminar on University Education in the New Economic Policy held at the Dr. Arcot Ramaswami Mudaliar and Dr. Arcot Lakshmanaswami Mudaliar Centre for Commonwealth and International Studies (DARALCS).

Developing countries had to grapple with poverty, and science and technology should be related to society and economic theory, he said.

Research and development funds of industry could be routed through the university system, without affecting the autonomy of functioning, said Dr. Vedagiri Shanmugasundaram, Director, DARALCS.

Prof. S. V. Chitti Babu, Vice-Chairman, Tamil Nadu State Council for Higher Education, said a conference of vice-chancellors had discussed the need for the central and state governments to continue the system of providing block grants, while the universities generated their own resources for development.

Prof. M.V. Mathur, former Vice-Chancellor, Rajasthan University, traced the experience of the West in involving the private sector and liberalisation of the university system.

IIT Delhi Field Unit

The Indian Institute of Technology(IIT), Delhi has opened a Foundation for Innovation & Technology Transfer, FITT extension office in Noida (UP) near Delhi.

The FITT extension office will have access to IIT computer resources, library, national and international data base through a complete terminal to be installed at the proposed office.

It will provide basic R&D inputs at IIT, Delhi to assist industries in choosing the right technology, and diversify their products.

The FITT will provide information support service, industrial clinic service, a human resource development programme, total quality management, technology-based services and diagnostic survey reports.

Ambedkar Open Varsity Offers Doctoral Programme

Persons without any formal academic qualification can register themselves directly for doctorate degree at the Dr B.R. Ambedkar Open University from the current year.

Under a dual entry scheme, India's first open university proposes to allow persons who have attained scholarly brilliance through publications to undertake Ph.D. programmes, besides the conventional mode of allowing only those who have cleared a Master's degree to join M.Phil. and Ph.D.

An expert committee would scrutinise candidates joining the Ph.D. programme through the unconventional mode, said the University's Vice-Chancellor, Prof S. Bashiruddin.

This year, the university would introduce a three-year Master's course in business administration and a two-year M.Sc. course in mathematics, besides new diploma courses in marketing management, environmental education, consumer education, women and health, and a certificate programme in Urdu medium in food and nutrition.

The university also proposes to launch a refresher course for correspondents of regional newspapers, in collaboration with the state commissionerate of information and public relations.

The Commonwealth of Learning, Vancouver(Canada) has sanctioned to the university 5,000 Canadian dollars (Rs 1.17 lakhs) towards scholarship for 236 meritorious and economically backward students, besides providing another 5,000 U.S. dollars (Rs 1.5 lakhs) for a mobile science laboratory, Prof Bashiruddin said.

IGNOU's Video Production Unit

Distance education should be used to strengthen primary education in the country, the Chairman of the Finance Commission, Mr. K.C.

Pant, said in New Delhi recently. He was inaugurating the "Video Production Set-up" of the Indira Gandhi National Open University(IGNOU) established under the Overseas Development Administration(ODA) grant from Britain. He stressed the importance of universal elementary education with no drop-outs. He said there was immense pressure of numbers on secondary and higher education in India.

The British High Commissioner, Sir Nicholas Fenn, who presided, said India and Great Britain shared similar educational and political institutions. Stating the IGNOU was moving in the right direction, he said the ODA would note the positive development for any future grant.

The IGNOU Vice-Chancellor, Prof. V.C. Kulandai Swamy, announced that the Open Learning Institute of Hong Kong, which had so far been buying material from the universities of Britain, Australia and Canada, had opted to buy instruction material from the IGNOU in the discipline of management.

IIT Develops Bionic Arm

Engineers at the Indian Institute of Technology, Kanpur are reported to have developed India's first bionic prostheses – an artificial hand that can be moved by impulses emerging directly from the brain.

The battery-powered, electronically-controlled hand is intended for accident victims who have lost their hands below the elbow, according to researchers at the department of electrical engineering.

Normal hand movements are executed when signals from the brain direct the hand muscles to move. In amputees, these signals are terminated at the stump – the site of amputation.

The new device picks up the signals from the brain reaching the muscles, and a motor drives finger movements. The model can be used to grip and release objects.

"This is a will-operated system. An amputee who wants to move fingers just has to will it", said

Professor G. C. Ray, a senior IIT research engineer who led the team that developed the device.

Goyal Foundation Awards Presented

Goyal Foundation Awards for 1993 carrying a prize of Rupees one lac each besides a Gold Medal and citation were conferred by Prof. S.Z. Qasim, the noted Oceanographer and Member, Planning Commission, Govt. of India at a colourful ceremony held at Kurukshetra University recently. Prof. C.N.R. Rao, Director, Indian Institute of Science and President, Jawaharlal Nehru Centre for Advanced Scientific Research, Bangalore, Prof. S.K. Joshi, Director General, Council of Scientific Research (CSIR) and Secretary, Govt. of India, Department of Scientific and Industrial Research, New Delhi and Dr. P.M. Bhargava, Distinguished Fellow at the Centre for Cellular and Molecular Biology (CCMB), Hyderabad won the awards for their contributions in the fields of Chemical, Physical and Life Sciences respectively. While Professor Rao was honoured for his outstanding work in Solid State Chemistry and Molecular Spectroscopy, Prof. Joshi got the award for opening new areas in the study of Solid State Physics. Dr. Bhargava who established CCMB, a unique Institution of its kind in the world, has made significant contribution in the study of Seminalplasmin profeins which may provide lead for developing anti-AIDS compounds. While Prof. Joshi and Dr. Bhargava received the awards personally, awards on behalf of Prof. Rao was received by Prof. S.V. Kessar of Panjab University. For certain unavoidable reasons, the award in the area of Hindi Literature could not be finalised this year and will be awarded alongwith the Goyal Prizes for 1994.

The award ceremony was presided over by the renowned Botanical Scientist and an arid zone specialist Dr. S. Arya, Vice-Chancellor of the University.

While highlighting the achievements of the CSIR, Prof. Joshi said

that the industrial production in India based on CSIR had technologies was estimated to be of the order of Rs. 1600 crores covering a wide variety of goods and processes. Further, the CSIR had developed technologies to manufacture comparatively safer pesticides, accounting for 25% of total production of technical pesticides in India. New drugs developed by the CSIR included guglipid and centchroman, which was the only non-steroidal, once a week, female contraceptive pill. He further added that his own research work on electrons and phonons in disordered system provided a better understanding of the electrical and optical properties of a large number of metallic alloys.

Dr. Bhargava, on the other hand, expressed his disappointment on the official indifference in providing necessary infrastructural help in thrust areas where India could acquire world leadership. Citing his own example, Dr. Bhargava said that Seminalplasmin, which is a potent anti-HIV agent (HIV is the virus that causes AIDS) developed by his group, did not get enough support even from the CCMB, the Institute which he conceived and built. He had now decided to transfer this work to the Director of French AIDS agency, Prof. Jean-Paul Levy. His dig that "We not only know how to miss a catch but we are also desperate to throw away a catch that has fallen in our own hands because we would not like our team to win", highlighted the general apathy and lack of appreciation of the work done by several bright Indian scientists.

In his presidential remarks, Dr. S. Arya, Vice-Chancellor, Kurukshetra University, lauded the Goyal Foundation in liberally funding such a noble cause. Such a gesture in his opinion should go a long way in promoting the cause of science in India.

Prof. Qasim and the awardees provided a rich feast of intellectual excursions into the mysteries of sub-atomic particles, biomolecules and the grandeur of nature, through

their talks which were highly appreciated by a discerning audience.

Status of Women in India

A two-day Inter-Department Seminar on 'The Status of Women in Ancient India as reflected in Sanskrit Literature', was held recently under the auspices of the Department of Sanskrit, Gauhati University.

Smt. Renu Devi, Dean, Faculty of Arts, Gauhati University while inaugurating the seminar dwelt at length on the unhappy state of affairs in respect of women in modern India.

Dr. N.K. Choudhury, Vice-Chancellor, who was the chief guest, lauded the efforts of the Sanskrit Department and expressed the hope that the deliberations would benefit the society for the wisdom embodied in Sanskrit literature.

Seventeen research papers, dealing with areas from the vedic period upto the classical Sanskrit period, were presented by teachers of various departments.

Dr. A.C. Barthakuria, Head of the Sanskrit Department directed the seminar.

NCRA Graduate School

National Centre for Radio Astrophysics (NCRA) of the Tata Institute of Fundamental Research, Pune invites applications for admission as Research Scholars to its graduate school. Selected candidates will work towards a Ph.D. degree in Astronomy and Astrophysics. Selection will be on the basis of a written test and interviews to be held in early July 1993. NCRA is one of the leading centres in the country for front-line research in Radio Astronomy and Astrophysics. It operates the Ooty Radio Telescope and is currently building the Giant Metrewave Radio Telescope (GMRT) near Pune, which will be the world's largest radio telescope operating at low radio frequencies. Scheduled for completion in 1994, GMRT will consist of 30 fully steerable parabolic dishes each with a diameter of 45 meters. Current areas of research at NCRA include topics in Extragalactic and Galactic

radio astronomy, such as quasars, radio galaxies, observational cosmology, galaxy formation, pulsars, supernova remnants, stars and stellar systems, Interstellar medium, Solar wind, etc.

Research scholars will undergo graduate courses in Physics, Astronomy and related areas for two semesters starting in August, 1993. Students can register for a Ph.D. programme after successful completion of the course and project work. Outstanding candidates may be absorbed in the staff after their Ph.D. The graduate courses are being organised jointly with the Inter-University Centre for Astronomy and Astrophysics (IUCAA), Pune.

Candidates must have obtained first class M.Sc. in Physics or Astronomy, or Bachelor's or Master's degree in electronics/electrical/communication engineering with adequate background and strong interest and aptitude in physics and mathematics. Candidates expecting their degrees by July 1993 may also apply. While a formal degree in astronomy/astrophysics is not necessary, a general interest in this field is highly desirable.

Research scholars will be paid a monthly honorarium of Rs. 2,200/-. This could be subsequently raised to Rs. 2,500/- based on their satisfactory performance. There is a book grant of Rs. 2,000/- per annum. Appointments are generally renewable upto 5 years.

Applications are to be made in prescribed forms which can be obtained by writing to Administrative Officer (II), NCRA (TIFR), Post Bag No.3, Ganeshkhind, Pune 411007, along with a 24 x 11 cm self-addressed, stamped (Rs. 2.00) envelope. Last date for receipt of completed applications is April 1, 1993.

Cambridge Varsity Scholarship

Applications have been invited for scholarship from students residing in Maharashtra, Gujarat or Goa who have secured admission to Cambridge University (U.K.), for undergraduate or postgraduate courses

commencing in the academic year October, 1993.

The amount of the scholarship would be about Rs 40,000 per year. Those who have secured admission should apply, providing the data pertaining to their academic career and proof of admission, to Mr A.K. Parikh, Cambridge Society Bombay Scholarship Fund, 91, Landmark, Dahanukar Marg, Bombay-400026.

Admission to Biotechnology Courses

The Jawaharlal Nehru University (JNU) will hold the All-India Combined Entrance Examination for admission to M.Sc./M.Tech biotechnology and M.Sc. (Agricultural biotechnology) on behalf of twelve other participating universities on Sunday, May 23, 1993.

Besides JNU, the other participating universities are Banaras Hindu University, Devi Ahilya Vishwavidyalaya, Guru Nanak Dev University, M.S. University of Baroda, Madurai Kamaraj University, Poona University, Goa University, G.B. Pant University of Agriculture and Technology, Central University, Hyderabad (all M.Sc. Biotechnology), Tamil Nadu Agricultural University, Coimbatore, G.B. Pant University of Agriculture and Technology, Pant Nagar (M.Sc. Agricultural Biotechnology), Anna University, Madras and Jadavpur University, Calcutta (M.Tech. Biotechnology).

The combined admission test will be held at 27 centres all over the country. The centres are Ahmedabad, Bangalore, Baroda, Bhubaneswar, Bombay, Calcutta, Chandigarh, Cochin, Coimbatore, Dehradun, Delhi, Gauhati, Goa, Hyderabad, Indore, Jaipur, Jammu, Lucknow, Madras, Madurai, Pant Nagar, Patna, Pune, Ranchi, Shillong, Varanasi and Vijayawada.

Biotechnology is a newly emerging multi-disciplinary area on the educational scene and programmes have been developed to meet the growing demand of training manpower for a meaningful biotechnology activity in the country exposing the students to exciting develop-

ments in the area of genetic engineering and biotechnology and their exploitation in industry, agriculture and medicine, etc.

Application forms alongwith information bulletin can be obtained on cash payment of Rs. 20/- per set by calling personally on any of the concerned universities. However, those wishing to get the form by post must approach the Assistant Registrar (Combined Entrance Examination Biotechnology), Jawaharlal Nehru University, New Delhi along with a crossed Indian Postal Order for Rs. 40/- payable to Jawaharlal Nehru University to cover the cost of one set of application form and postage with a self-addressed unstamped envelope of the size 28 x 20 cms. Since there are separate application forms, for each programme, the candidates should clearly indicate their preference.

Forms will be issued upto April 14, 1993. Completed application forms are required to be mailed only to Jawaharlal Nehru University and not to other participating Universities latest by April 19, 1993.

Candidates selected for admission to M.Sc./M.Tech programmes in biotechnology will be eligible to receive scholarships/fellowships.

Indian Navy Promotes Defence Technology

The Indian navy has instituted a new scheme for indigenously developing marine systems and equipment in the field of defence technology by tapping the potential of engineering students.

The naval headquarters is reported to have sent out details of the scheme to all IITs, reputed universities and colleges for obtaining names of suitable students for shortlisting with the navy.

These motivated engineering students will be required to explore new avenues for undertaking innovative research work in generic areas of marine defence systems and technology, including electronic, electrical hull, propulsion, weapons and associated machinery.

News from Agricultural Universities

National Symposium on Biotechnology

A National Symposium on 'Prospects and Problems of Biotechnology' was organised by the Bioved Research Society, Allahabad, under the auspices of the Department of Science and Technology at the Botany Department of Allahabad University recently.

Dr. Anuj Sinha, Director, Department of Science and Technology, in his inaugural address, said that there was tremendous scope for biotechnology in the field of agriculture, health and sanitation and industrial activities. He emphasised the importance of technology in the production pattern and said that there was little scope for increasing agricultural production merely by increasing the area under cultivation. "Thus it has become imperative to concentrate on exploring the potential for biotechnology," he said.

The inaugural session was presided over by Dr NKS Gaur, ex-UP minister for higher education, who spoke on the importance of genetic engineering in improving the strains of crops.

During the inaugural session, the Bioved Research Society presented fellowships and awards honouring the distinguished scientists and researchers. Honorary fellow awards were given to Prof AN Chattoraj, Prof KC Pandey, Prof SA Suryavanshi, Prof Abrar M Khan, and Prof DD Nautiyal.

Fellow awards were presented to Prof DN Vishnoi, Dr SC Atri, Dr SD Mishra, Dr SL Mishra, Dr Neeta Sharma, and Dr VPS Chahal.

Dr TA Khan, Dr Sonali Chaturvedi and Dr Gopal Pandey, bagged the Young Scientist award. Distinguished Service award went to Dr Brijesh Kant Dwivedi. Scientist of

the Year award was given to Dr MM Alam, Aligarh.

Five books (Survey of researches in life science in 5 volumes) were released in the inaugural session by Dr Anuj Sinha and Dr NKS Gaur. New Approaches in Agricultural Technology in 3 volumes, Integrated Pest Management and Bibliography of Biological Control of Nematodes.

During the second technical session scientists emphasised the need to protect the rich biodiversity of India. They emphasised that unchecked hyper extraction of natural resources for needbased consumption pattern of the society was the main cause of the reducing biodiversity.

During the third session the scientist suggested biological measures to control plant diseases. Dr TA Khan on the basis of his experiments reported that some natural endowments such as 'Neem' cake and green leaves were capable of controlling nematodes well as providing essential nutrients to the plants. Scientists at this session unanimously recommended the scientific use of traditional methods of plant protection.

During the next session performance of some hybrid varieties which are less water consuming, less fertilizer consuming and disease resistant was discussed. Scientists of the IARI reported that progress made so far in the development of hybrid varieties was very encouraging.

The poster session was very informative. The posters conveyed brilliantly the control of nematode diseases by biological measures.

Some distinguished scientists of the country delivered lectures in the invited lecture sessions. Prof R Sahai, Director, NBAGR, Karnal,

expressed his view about the need for the preservation of traditional varieties of seeds and emphasised the need for the vertical growth of the agricultural sector. Dr P Das, Director, NBAGR, Allahabad, reported on the basis of his researches his inventions about the fish farming and explained that there was vast scope for the development of fish production so that the income of the small and marginal farmers could be supplemented through fish farming.

Eminent scientists from Allahabad, Delhi, Aligarh, Jaipur, Bombay, Patna, Ludhiana, Karnal, Sagar, Jabalpur, etc. participated and presented their research findings in the technical sessions of the symposium through their papers and slides. Eminent scientists from the Indian Council of Agricultural Research, (ICAR), Indian Agriculture Research Institute, (IARI), New Delhi, Aligarh Muslim University, Sagar University, NBAGR, Karnal, NBAGR, Allahabad, participated in the symposium.

Sanitation Week

To acquaint the farm women with the time, labour and money saving technologies and also to educate them in health and sanitation aspects, the Family Resource Management Department of the Home Science College of Chaudhary Charan Singh Haryana Agricultural University (CCSHAU) organised a Sanitation Drive Week at Village Kaimeri recently.

According to the programme in-charge, Dr. (Mrs.) Savita Singal, the home science experts delivered lectures on environmental sanitation, personal hygiene, food hygiene, proper care and storage of grains, clothes and control of household pests and insects. Demonstrations were given on the construction of smokeless chullah, safe storage and use of drinking water and proper use of Janta water filter, solar cooker, etc. More than 500 women were benefited by the programme.

Dr. H.C. Sharma, Director Research, CCSHAU, gave prizes to the women who adopted the new techniques as per guidelines of the experts of the home science. Dr. A.S. Faroda, Director Extension Education advised the women to get maximum

benefit out of such programmes.

Dr. B.M. Chauhan, Dean, College of Home Sciences, highlighted the programmes adopted by the College for the betterment of farm women.

Sports News

Sports Sciences and Sports Performance

Highly competitive nature of sports, support of modern day sciences and the falling standards of sports are the driving forces to deliberate upon various dimensions of sports in the country. A Seminar under the aegis of Sports Sciences Research Foundation held at New Delhi recently highlighted the role of sports sciences in sports performance.

Speaking on the occasion, Secretary, Deptt. of Sports and Youth Affairs, and Director-General, Sports Authority of India, Mr B.N. Bhagwat, expressed concern regarding promotion of applied research and young researchers in the areas of sports sciences. Mr Bhagwat stressed that without the support of sports sciences it was rather difficult to make a world class sports person.

Prof. Mohd. Amin, former Chairman, Delhi University Sports Council, encouraged the parents to take the hardships of sports and advised the sports administrators to promote the potential and merit in selection of the teams.

In his presidential address, Shri Randhir Singh, Secretary General, Olympic Council of Asia and Indian Olympic Association, expressed his serious concern about mixing of politics and sports, nomination of managers and coaches as well as lack of scientific support to the elite athletes.

Sports Sciences Research Foundation having a committed membership of doctors, scientists, physical educationists, coaches, physiotherapists and outstanding sports persons, envisaged that ultimate concern of any society was excellent performance in sports and the celebrated sports persons.

To mark the modest beginning for a system approach, the Foundation conferred awards for 'distinguished services to the world of sports' on Ajit Pal Singh (Hockey), Bahadur Prasad (Athletics), Khajan Singh (Swimming), Limba Ram (Archery), Manjit Dua (Table Tennis), Pappu Yadav (Wrestling), Shiny Wilson (Athletics), Sunita Godara (Marathon), Dr Narottam Puri (Sports Broadcasting) and Dr. L.C. Gupta (Sports Medicine).

Dr. Jawahar Jain, President of the Foundation, stressed the need to educate athletes and coaches on their personal management including nutrition, drug abuse, injuries and rehabilitation, psychological preparation as to be socially elevated individuals.

Dr Kiran Sandhu, former international basketball player and Secretary of the Foundation, said that falling sports standard in the country was common placed, yet it was controversial to adopt any line of action. She stressed that sports today was no more a mere play but needed a

scientific enquiry and systematic analysis for better gains.

The keynote speaker, Dr M.S. Malhotra, Chairman, Sports Medicine Advisory Committee, Sports Authority of India, emphasised the role of balanced nutrition for sportsmen. Dr. A.K. Ghosh, Director, Sports Sciences, Sports Authority of India, stressed that status of a player could be best determined for undertaking training load through the measurement of physiological variables.

Dr P.K. Pande, noted sports medicine expert from LNCPE, Gwalior, elaborated that most of the sports injuries were preventable and he proposed educative measures for the athletes. Geoffery Herbert, Special Ambassador Olympics, attending to world class athletes and sports physiotherapist in Germany, presented a talk on personal preparation of sports physiotherapists. Dr. P.K. Prabhakar, Asstt. Professor, Institute of Physically Handicapped, Government of India stressed the need of immediate rehabilitation of sports injuries through physical modalities like Hydrotherapy, Diathermy, etc. A panel of experts comprising Dr Neena Bohra, Consultant & Head, Deptt. of Psychiatry, Ram Manohar Lohia Hospital, Dr Avdesh Sharma, Psychiatrist, Dr Sanjiv Sahni, Sports Psychologist, SAI, Sunita Godara, marathon athletes on sports psychology headed by Member Medical Commission., I.O.A., Dr Jawahar Jain highlighted the mental preparation as the winning force of the athletes in competitive sports. The serious threat posed by the use of drugs to enhance performance was discouraged by Dr Alka Beotra of Dope Control Centre, SAI. Dr Kiran Sandhu, speaking on women and sports, highlighted that besides specific training methods in line with physiological and physical make up, women in sports was more a social issue calling for the attention of social scientists.

The programmes of the Foundations were endorsed by Maj. O.P. Bhatia, Executive Director, Sports Authority of India. He also invited the scientists of the Foundation to come forward to help SAI to implement the sports programmes more effectively.

The delegates at the Seminar made the following recommendations :

- (a) The sports performer needs to be scientifically studied comprehensively;
- (b) Research and development effort for sports is of immense significance not only to improve the performance of few, but to promote the future development of 'sports for all';
- (c) An integrated, well organised and uniform approach to provide a scientific back-up to elite sports performers should be promoted;
- (d) Stress in the curriculum be laid on sports sciences through school, college and university physical education programmes;
- (e) Young researchers working in sports world be provided with more national and international exposure for better comparative understanding of applied research for sports performances;
- (f) A close co-ordination and liaison among coaches, physical educationists, sports doctors and scientists be accorded for providing proper scientific support to lay stronger foundation of sports in the country; and
- (g) Sports research promoting agencies should be commissioned by UGC, IOA and SAI

INDIAN COUNCIL OF MEDICAL RESEARCH

Applications are invited upto 15th April, 1993 for the following posts at the Council's Institutes/Centres :-

1. AT THE NATIONAL INSTITUTE OF VIROLOGY, PUNE

Deputy Director (Tissue Culture & Cell Biology) (One post)

(Scale of pay of Rs. 4500-150-5700)

Qualifications & Experience : Essential : MBBS or M.Sc. (1st class) in Microbiology/Life Sciences/Biochemistry with 12 years research/teaching experience in Tissue Culture/Cell Biology or M.D. or Ph.D. in the above fields with 10 years research/teaching experience as evidenced by publications of good quality.

Job Requirements : The incumbent will be required to undertake research in Cell Biology and Tissue Culture including Mass cultivation of cells, pilot plant production of vaccine, quality control, etc. He should be able to guide and formulate research programmes in the above fields. He should also be prepared to carry out field investigations on diseases anywhere in India for any period of time.

2. AT THE NATIONAL AIDS RESEARCH INSTITUTE, BHOSARI PUNE

Senior Research Officers (Two posts) (Scale of pay of Rs. 3000- 100-3500-125-4500)

a) For Post No. I - S.R.O. (Psychology)

Qualifications & Experience : Essential : 1st class M.A. in Psychology with at least 6 years research/teaching experience in the field of Psychology. For those possessing Ph.D. 2 years experience in relevant field. **Desirable :** Working experience in the field of counselling and psychosocial assessment of the HIV infected persons.

Job Requirements : To provide pre and post-counselling and conduct psychosocial assessment of patients.

b) For Post No. II - S.R.O. (Clinical Medicine)

Qualifications & Experience : Essential : MBBS with 6 years (after completing the internship) research/teaching experience in treatment and management of patients with communicable diseases. For those possessing M.D. degree 2 years experience in relevant field.

Desirable : Experience in clinical management of HIV infected persons including those with opportunistic infections. **Job Requirements :** To manage patients with compromised immune system, and treat opportunistic infections. Also to co-ordinate data collection, perform clinical examination, and patient care.

Age : Below 50 years for the post of Deputy Director and below 45 years for the posts of Senior Research Officer. SC/ST candidates allowed relaxation in accordance with Govt. of India Rules. Candidate belonging to SC/ST communities will have to furnish certificates from prescribed authority in the required format printed at page 345 of the brochure on reservation of SC & ST in services which can be supplied on demand failing which they will not be entitled to the concession admissible to them, if any. Since it is not possible to call all the eligible candidates for the interview, the applications will be shortlisted for the purpose and the decisions of the Director General will be final. The number of vacancies to be filled may vary at the time of actual selection. In the event of non-availability of suitable candidates for advertised posts, the positions can be filled up at lower level. Allowances as per Central Government rules are admissible on the above pay scales. Benefits of pension admissible. Private practice is not allowed. However, NPA as per rules of the Council is admissible to medical graduates only. Candidates called for interview for the posts of Deputy Director will be paid 1st class rail fare and for the posts of Senior Research Officer will be paid 2nd class rail fare by shortest route, on production of documents. Applications from employees working in Central/State Govt. Deptt/Public Sector Undertaking and Govt. funded research agencies must be forwarded through proper channel. Application forms can be obtained from the office of the Director General, Indian Council of Medical Research, Ansari Nagar, Post Box No. 4508, New Delhi-110 029. Forms duly completed should be sent to the Director General, Indian Council of Medical Research, Ansari Nagar, Post Box No. 4508, New Delhi-110 029 with a crossed IPO for Rs. 8/- payable to the Director General, ICMR, New Delhi. SC/ST candidates are exempted from this payment. Incomplete and late application or without postal orders will not be entertained. The name of the post and of the Institute/Centre must be indicated in the Application Form. Separate application form should be submitted for each post with crossed IPO for Rs. 8/- and for each Institute/Centre.

THESES OF THE MONTH

A list of doctoral theses accepted by Indian Universities

HUMANITIES

Philosophy

1. Sahoo, Bhaskar Chandra. *The problem of other mind*. Durgawati.
2. Sharma, Rajni. *Samkaleen Bhartiya darshnikon ke drisht mein Bhartiya sanskriti ka swarup: Mahatma Gandhi, Shri Aurobindo, Dr Radhakrishnan ke vishesh sandarbh mein*. Durgawati. Dr J P Shukla, Prof and Head, Department of Philosophy, Rani Durgawati Vishwavidyalaya, Jabalpur.

Fine Arts

Drawing & Painting

1. Aggarwal, Deepa. *Shilpa Guru Kshtindranath Majumdar ke chitron ka Bengal School ke anya kalakaron ke sandarbh mein sameekshatmak adhyayan*. Indira Kala. Dr S B Vakanakar.

2. Chattopadhyay, Debda. *Rarh Banger utsarga silpa*. Rabindra Bharati.

Music

1. Chattopadhyay, Kalyan Kumar. *An investigation into the inward psycho-temporal and psychological attributes of instrumental musicians*. Rabindra Bharati.

2. Chaturvedi, Harshkumar. *Bundeli lok sangeet ka shastriya adhyayan*. Indira Kala. Shri Sharif Mohammad, Head, Department of Folk Music, Indira Kala Sangeet Vishwavidyalaya, Khairagarh.

3. Dewangan, Rudramani. *Tulsi ke kavya mein sangitik tatva*. Indira Kala. Shri Tulsiram Dewangan, Kamla Devi Sangeet Mahavidyalaya, Raipur.

4. Khanna, Nirmala. *Pandit Bhatkhande Jee ka Hindustani shastriya sangeet mein bandishon ka yogdan*. Indira Kala. Late Thakur Jaydev Singh and Prof P N Chinchore, 157, Shrinagar Colony, Indore.

5. Parveen, Seema. *Ghazal ke sangeet paksha ka vishleshnatmak adhyayan*. Vikram. Dr Pyarelal Shrimat, 'Saraspanit' Rangmahal, Naipeth, Ujjain.

6. Sharma, Devaraj. *Kangra anchal ke lok sangeet ka swarankan evam saidhantik vivechana*. Indira Kala. Dr Gautam Sharma, "Vyathit" Raj Mandir Nareti, Kangra.

Language & Literature

English

1. Bhatnagar, Mita. *Quest for identity in French Canadian fiction*. Jamia. Prof M Waseem, Department of English, Jamia Millia Islamia, New Delhi.

2. Bhatt, Priti. *A thematic study of Asif Currimbhoy's plays*. Barkatullah.

3. Khurshid Imam. *A study of contemporary Indian English literature: The case of Khwaja Ahmad Abbas*. Jamia. Prof A A Siddiqui, Department of English, Jamia Millia Islamia, New Delhi.

4. Mann, Paramjit. *His mind and craft and the complexity of symbolism: A study of Yeats nondramatic verse*. Jiwaji. Dr J R Deshmukh, Department of English, Govt P G College, Guna.

5. Nath, Rita. *The postcolonial encounter: India in the British imagination*. JNU. Prof Meenakshi Mukherjee, Centre of Linguistics and English, Jawaharlal Nehru University, New Delhi.

6. Raghu, A. *Nissim Ezekiel's poetry: A study of themes and styles*. Kerala. Dr (Mrs) K Radha, Prof and Head, Institute of English, University of Kerala, Thiruvananthapuram.

7. Rakheja, Rashmi. *Hardy's poetry: A study in matter, meaning and mood*. Barkatullah.

8. Rana, Sarwapal Singh. *The poetry of John Ashbary upto 1984: A critical estimate*. Vikram. Dr Achla Sharma, Prof, Department of English, Vikram University, Ujjain.

9. Ranjan, Neelima. *Regionalism to Porter's short stories*. Barkatullah.

10. Sharma, Guruaribam Ibopishak. *A study of secular thought in the poetry of Alfred Lord Tennyson and Robert Browning*. Manipur. Dr R C Singh, Lecturer, Oriental College, Imphal.

11. Uppal, Shvata. *Robert Browning as a poet of love*. Barkatullah.

12. Verma, Daya Nand. *Social protest in the five novels of Mulk Raj Anand*. HP.

Sanskrit

1. Choubey, Sudhir Prasad. *Brihadarnyakopnishad ka darshnik evam sanskritik adhyayan*. Magadh.

2. Dondiyal, Madhu. *Hindu smritikaron ke samajik utkarshmulak pramukh siddhant*. Garhwal. Dr Shivram Mourya.

3. Jain, Mani Prabha. *Acharya Kund Kund ka tatvik chintan: Pramukh Upanishadon ke sandarbh mein tulnatmak adhyayan*. Durgawati. Dr V P Jain, Prof, Department of Sanskrit, Rani Durgawati Vishwavidyalaya, Jabalpur.

4. Joshi, Manohar Prashad. *Sanskrit vangmaya evam Garhwali manyataon mein Yaksh: Ek tulnatmak adhyayan*. Garhwal. Dr P Dobhal.

5. Jugaran, Indira. *Madhya Himalaya ke Sanskrit abhilekhon ka vivechanatmak adhyayan*. Garhwal. Dr R P Tiwari.

6. Katar, Neera. *Sanskrit mahakavyon mein nirupit prem tatva: Ek vivechanatmak adhyayan*. Garhwal. Dr G S Trivedi.

7. Mishra, Kailash Chandra. *Shri Harshbhajyostulnatmak adhyayan*. Jagannath. Dr Harekrishna Satpathy, Reader, Department of Sanskrit, Shri Jagannath Sanskrit Vishwavidyalaya, Puri.

8. Mishra, Manoj. *Pramukh Puranon mein nari chitran*. Bundelkhand. Dr Ramavtar Tripathi, JLN College, Banda.

9. Mishra, Ram Narayana. **Puranon mein ulikhit vyakarana shastriya samagri ka sameekshatmak adhyayan.** Ghasidas. Dr K P Pandey, C M Dubey Postgraduate College, Bilaspur.

10. Mohapatra, Dibakar. **Ashwameghayagya sameeksha.** Jagannath. Pt Somanath Dash, Deputy Director, Research Project, Shri Jagannath Sanskrit Vishwavidyalaya, Puri.

11. Paliwal, Shrikrashan. **Kavyabrittri mein huye prakriti chitran ka sameekshatmak adhyayan.** Durgawati. Dr K K Chaturvedi, Prof and Head, Department of Sanskrit, Rani Durgawati Vishwavidyalaya, Jabalpur.

12. Pitambar Dass. **A critical study of Sanskrit kavyas of Duggar, 1901-1980.** Jammu. Dr (Mrs) Ved Ghai, Prof, Department of Sanskrit, University of Jammu, Jammu.

13. Pundir, Deveshwari. **Vartman Jeevan mein Smriti sahitya ke upayogita.** Garhwal. Dr R P Tiwari.

14. Radha, B. **A critical study of Ganasyama's commentary on the Sakuntalam.** Bharathidasan. Dr G Sundaramoorthy, 40, 'S meru' 2d St, Ram Nagar, S S Colony, Madurai.

15. Rawat, Punita. **Sanskrit gadya sahitya mein nari chitran.** Garhwal. Dr R P Tiwari.

16. Sarangi, Durga Chetan. **Karka parkarne shshthivibhktiyarth vimarsh.** Jagannath. Dr Kishore Chandra Padhi, Reader, Department of Vyakaran, Shri Jagannath Sanskrit Vishwavidyalaya, Puri.

17. Saroj Bala. **Murarikrit Anarghraghav tatha Jaidevkrit Prasannraghav ka tulnatmak adhyayan.** Garhwal. Dr R P Tiwari.

18. Singh, Annu. **Dr Rewa Prasad Dwivedi krit Kavyalankar Karika ka sameekshatmak adhyayan.** Durgawati. Dr R B Dwivedi, Department of Sanskrit, Rani Durgawati Vishwavidyalaya, Jabalpur.

19. Sushma Devi. **Bharatkrit natyashastra mein uplabdh nrityaparak samagri ka adhyayan.** Jammu. Dr (Mrs) Ved Ghai, Prof, Department of Sanskrit, University of Jammu, Jammu.

Pali

1. Shiv Shankar. **Bodh, Jain evam Yoga darshan mein Panchsheel: Swaroop vishleshan.** Magadh.

Hindi

1. Anwar, Sayeeda. **Suflsant Rangila: Vyaktitva aur krititva.** Osmania.

2. Badoni, Mitranand. **Hindi natya shilpa.** Garhwal. Dr Gopinath Tiwari.

3. Baranhas, Manjula. **Hindi ke mahila upanyaskaron ke sandarbh mein Mannu Bhandari ke upanyas sahitya ka adhyayan.** H S Gour. Dr (Smt) Prabhawati Singh, Department of Hindi, Govt Postgraduate College, Damoh.

4. Benu Bala. **Nirala-kavya mein prakriti ka upyog.** Delhi.

5. Chamoli, Kusumlata. **Samkaleen yug Bangha aur Dr Shyam Singh Shashi ka sahitya.** Garhwal. Dr Mridula Jugran.

6. Debhikar, Atmaram Narayan. **Devesh Thakur, vyaktitva aur krititva: Ek anusheelan.** Nagpur. Dr Ramgopal Soni, Vidyapeeth Teaching College, Nagpur.

7. Dube, Rama. **Swantantrayottar parmukh mahila kahanikaron ke kahaniyon mein nari patron ka swaroop.** Barkatullah.

8. Dwivedi, Dinesh Kumar. **Hindi sahitya mein Gautam Buddh aur unke chintan ke abhivyakti.** Bundelkhand. Dr D P Srivastava, D V College, Orai.

9. Gehani, Dinesh Jethanand. **Premchand ke upanyason mein sanskritik aur samajik sangharsh chetna: Anusheelan.** Nagpur. Dr (Miss) Usha Shajapurkar, Department of Hindi, R S Bidkar College, Hinganaghat.

10. Jain, Kiran. **Jain darshan ke sandarbh mein Muni Vidyasagar Jee ke sahitya ka anusheelan.** H S Gour. Dr Suresh Acharya, Department of Hindi, Dr Harisingh Gour Vishwavidyalaya, Sagar.

11. Kamaljeet Kaur. **Sathottar Hindi kahani yugeen sandarbh.** Ghasidas. Dr Jagmohan Mishra, Link Road, Bilaspur.

12. Mall Reddy, B. **Swatantrayottar Hindi aur Telugu kavita mein samajik kranti, 1947 to 1990.** Osmania.

13. Mishra, Omprakash Mathuraprasad. **Madhyayugeen bhakti andolan evam Ram kavya ke chetna: Adhunik paripekshya mein punramulayakan.** Nagpur. Dr Ramgopal Soni, Nagpur Vidyapeeth Teaching College, Nagpur.

14. Napit, Surya Prakash. **Dharamvir Bharati ke sahitya mein adhunik bodh ke ayam.** Rajasthan. Dr H C Sharma, Abhishek, 1/1304, Malviya Nagar, Jaipur.

15. Nema, Meera Mandakini. **Kamaleshwar ke katha sahitya ka sameekshatmak adhyayan.** Durgawati. Dr (Smt) S Dubey, Department of Hindi, Rani Durgawati Vishwavidyalaya, Jabalpur.

16. Patang, Shivsingh. **Adhunik Hindi kavita mein Madhya Pradesh ke kaviyon ka yogdan.** Vikram. Dr Chandrakant Devatale, Principal, Govt College, Nagda.

17. Poddar, Shashi. **Adhunik Hindi kahaniyon ka samaj shastriya adhyayan.** Calcutta.

18. Sharma, Anjali. **Hindi laghu katha: Laghu katha evam vikas.** Ghasidas. Dr Vinay Pathak.

19. Sharma, Anuja. **Prayogvadi sameeksha paddhti ke paripekshya mein Gajanan Madhav Muktibodh (Hindi) aur Pra Da L Kulkarni (Marathi) ke sameeksha karya ka tulnatmak adhyayan.** Nagpur. Dr Ghanshyam Vyas, Department of Hindi, Nagpur University, Nagpur.

20. Sharma, Chandra Pal. **Mithak ke abhivyakti ka vivechan: Chhayavadi kavya ke sandarbh mein.** Jamia. Dr (Mrs) Phool Manchanda, Lecturer, Department of Hindi, Jamia Millia Islamia, New Delhi.

21. Sharma, Kalpana. **Sur ka leela kavya.** Jiwaji. Dr K M Sharma, Prof, Department of Hindi, Govt P G College, Morena.

22. Sharma, Kusum. **Kavi Rajesh Dyalu Rajesh: Vyaktitva aur krititva.** HP.

23. Sharma, Sulekh Chandra. **Hindi-Urdu alochana ka tulnatmak adhyayan.** Delhi.

24. Sikarwar, Suresh Singh. **Bharat mein Islam ke sanskritik prabhav mein madhyakalin bhakti kavya ke bhumika.** Jiwaji. Dr Jadupati Singh, Laxmiganj, Laskar, Gwalior.

25. Singh, Sangeeta. **Navgeet ka samagra anusheelan.** Ghasidas. Dr Shyam Sunder Dubey, Head, Department of Hindi, Govt Postgraduate College, Hata, Damoh.

26. Tejani, Alpa. **Swatantrayottar Hindi kahani lekhikayon ke rachnaon mein samaj chetna.** Ghasidas. Dr R D Saxena, Govt Arts and Commerce College, Bilaspur.

27. Tripathi, Vinod Kumar. **Anand Ramayana evam Ramcharit Manas ka tulnatmak adhyayan.** Bundelkhand. Dr V D Awasthi, Atarra Postgraduate College, Atarra.

28. Uniyal, Jayanand. **Tihari Jile ke boli ka adhyayan.** Garhwal. Dr N K Sharma.

29. Vaswani, Sushila Hariram. **Amritlal Nagar ke upanyason ka samajshastriya vishleshan.** Nagpur. Dr Durgashankar Mishra, Naik Road, Mahal, Nagpur.

Urdu

1. Mohd Ramzan. **Trends in post independence Urdu criticism.** Jammu. Dr Zahur-ud-Din, Reader, Department of Urdu, University of Jammu, Jammu.

2. Parwin, Hashmat. **Life and works of Mohammad Abdur Rahman Bismil Sunsaharwi.** Calcutta.

3. Quraishi, Azhari Khanam. **The trend of national integration in Urdu poetry after independence.** Nagpur. Dr M R Khan, 11, Starky Town, Mangal Bazar, Nagpur.

4. Syed Abbas. **Urdu adab mein Tanzeo Mizah ka samaji O tehzibi pasmanzer.** Osmania.

5. Zafar Iqbal. **Urdu language, literature and education in Bidar District after independence, 1947 to 1987.** Gulbarga. Dr B N Quraishi Rahi, Reader, Department of Urdu, Gulbarga University, Gulbarga.

Bengali

1. Chakrabarti, Chandana. **Dui mahajuddher madhyabarti Rabindranather chotto galpa.** Calcutta.

Oriya

1. Misra, Sankar. **Gopinatha Mohantynka upanyasare charitra srusti.** Berhampur. Prof Basudeva Sahu, Department of Oriya, Utkal University, Vani Vihar, Bhubaneswar.

2. Satapathy, Santosh Kumar. **Performing art tradition of Ganjam: A study.** Berhampur. Dr Sudarsana Acharya, Prof, Department of Oriya, Berhampur University, Berhampur and Dr L N Rout, Reader, Department of History, Berhampur University, Berhampur.

Marathi

1. Amrite, Sandhya Vinay. **Mahesh Elkunchvar yanche natyavangmaya ek chikitsak abhyas: Astitvavadi janiva va papsankalpna yancha vishesh sandarbhsah.** Nagpur. Dr DV Kulkarni, Department of Marathi, Nagpur University, Nagpur.

2. Kelapure, Kunda Gangadhar. **Chi V Josho yanche kathasahitya chikitsak abhayas.** Nagpur. Dr Vasant Krishan Bahadpandey, Head (Retd), Department of Marathi, Hislop College, Nagpur.

3. Pandit, Ravikiran Vasantrao. **Nathamadhav yanchya samagra sahityacha abhyas.** Nagpur. Dr V N Prabhudesai, Prof, Department of Marathi, Nagpur University, Nagpur.

Arabic

1. Abul Hasanat. **The contribution of Darul Uloom Nandwatul Ulema to Arabic literature.** Jamia. Dr Zubair Ahmad Faruqi, Reader, Department of Arabic, Jamia Millia Islamia, New Delhi.

Tamil

1. Kalaiventhan, M. **Thiru Vi Ka Padaippugal Kattum vazhkal neri.** Bharathidasan. Dr K Ramaiyan, Postal Colony, Manjikkottai Road, Thanjavur.

2. Rangarajan, A. **Naalayira Dhivya Pnabandaltill Aruliyal, Thirumizhisoi Aazhvar.** Bharathidasan. Dr N Rajagopalan, D-55, 6th Cross, Thillainagar.

Telugu

1. Girilakshmi, K. **The lives and teachings of Alvars in Telugu poetry.** Osmania.

2. Mohammad Mehboob Ali. **Adunika kavi thwam: Vasthuvu, roopa parinamam.** Osmania.

3. Narasamamba, K V S L. **Turpu Godavari Zilla Muslim streela konni moukhika akhyanal: Oka pariseelana.** Telugu.

4. Ram Babu, R. **Krishna bhakti in Viswanatha's poetry.** Telugu.

5. Ramanujacharyulu, Ch. **Telugulo thiruvaymozhi.** Osmania.

6. Subba Chary, P. **Janapada Vijnanamlo Asritesahityam.** Osmania.

Geography

1. Chauhan, Ranveer Singh. **Hamirpur Tehsil (UP) mein bhumii upyog: Poshana star evam manav swasthya.** Bundelkhand. Dr R S Tripathi, Atarra Postgraduate College, Atarra.

2. Chunna. **Shrimad Bhagwat Puran ka bhugolik vivechan.** Bundelkhand. Dr R L Tripathi, Atarra Postgraduate College, Atarra.

3. Hamdani, Syed Karamat Hassan. **Land use, availability of nutrition and deficiency diseases in the Anantnag District, J & Kashmir.** Jamia. Dr S Sajid Hussain, Reader, Department of Geography, Jamia Millia Islamia, New Delhi.

4. Khan, Alimul Haque. **The impact of new agricultural technology on the socio-economic life of the Tarus: A tribal community of UP.** Jamia. Prof Qazi Mohammad, Department of Geography, Jamia Millia Islamia, New Delhi.

5. Kishori Lal. **Himachal Pradesh: A study in multilevel regional planning.** Garhwal. Dr Har Prasad.

6. Maiti, Gopal Chandra. Landform development and its impact on land use patterns of the middle Mahanadi Basin, Orissa. Calcutta.

7. Mitra, Nita. The role of urban centre in the development of regional economy of North Bengal. NBU.

8. Mukhopadhyay, Subhash Chandra. The Tista Basin: A study in fluvial geomorphology. Calcutta.

9. Naithani, Bhanu Prasad. Terrain evaluation in relation to resource utilization and environmental management. Garhwal. Dr Devidutt.

10. Narayan Reddy, K. Urban redevelopment: A study of high-rise buildings in Hyderabad City. Osmania.

11. Narula, Har Krishan Kumar. Fertility patterns of population in the Union Territory of Delhi. Jamia. Dr M Abuzar, Reader, Department of Geography, Jamia Millia Islamia, New Delhi.

12. Parmatma Singh. Mandakini Basin : A study in morphometric analysis land forms. Garhwal. Prof O P Singh.

13. Prem Lal. Garhwal mein gramini sadakon ka vikasantmak mulayankan. Garhwal. Dr Kamlesh Kumar.

14. Rakesh Bhushan. Necessity and possibilities of social forestry and economic development in Western Tehri Garhwal Region. Garhwal. Dr D D Maitihani.

15. Sad, Aboo. Resource pattern and integrated rural area development of Bijnore Tehsil. Garhwal. Prof O P Singh.

16. Sati, V P. Horticultural development in Alaknanda Basin. Garhwal. Dr Kamlesh Kumar.

17. Satish Chandra. Investment pattern of General Insurance Corporation in India. Garhwal. Dr S K Srivastava.

18. Satya Ratan. Urbanisation in Himachal Pradesh: A geographical appraisal. Garhwal. Dr S C Singh.

19. Shadhay Singh. Scope of social forestry in Nayar Basin. Garhwal. Dr P C Naithani.

20. Verma, Rakesh. Consumer's movement in India. Garhwal. Dr A K Dass.

21. Verma, Sadhana. Tehsil Ambaha (Morena, M P) ka gramini krishkon ke jeevan ke gunvatta: Kshetriya vikas ka vyashthiparak bhaugolik adhyayan. Jiwaji. Dr B V Singh, Dean, College Development Council, Jiwaji University, Gwalior.

History

1. Bakshi, Veena. Motifs and designs on the painted pottery of chalcolithic cultures of Central India and Deccan. Durgawati. Dr R K Sharma, Visiting Prof, Department of Ancient Indian History, Culture and Archaeology, Dr Hari Singh Gour Vishwavidyalaya, Sagar.

2. Chakravarti, R. Japan mein Boddh sampradayon ke darshanik siddhant tatha pratimayen tatha Bharat aur kuchh anye Boddh deshon se unki tulana. Garhwal.

3. Dey, Ruchira. A study of the administration of the central provinces, 1861-1903. Barkatullah.

4. Goutam, Raj Kumar. Jahagirnama ka itihastik adhyayan. Durgawati. Dr Rajiv Dueby, Department of History, Rani Durgawati Vishwavidyalaya, Jabalpur.

5. Hasan, Syed Bashir. Malwa under the Mughals, 1562-1707. AMU. Prof M Zameeruddin Siddiqui, Department of History, Aligarh Muslim University, Aligarh.

6. Hassan Imam. National movement in Bihar: Khilafat to civil disobedience, 1919-31. AMU. Prof Zameeruddin Siddiqui, Department of History, Aligarh Muslim University, Aligarh.

7. Khan, Sumbul Halim. Relations of Amber, Jaipur State with Mughal Court, 1694-1744. AMU. Prof Satish Chandra.

8. Lokendra, M. Social change in Manipur, 1891-1972. Manipur. Prof Gangmumei Kabui, Department of History, Manipur University, Imphal.

9. Mukhopadhyay, Uma. Socio-cultural life in Ancient Bengal as depicted in terracottas from earliest times to twelfth century A D. Calcutta.

10. Sharma, Rama. Municipal Government and administration in Jammu City from 1884 to 1987. Jammu. Dr S D S Charak, Lecturer, Department of History, University of Jammu, Jammu.

11. Tiwari, Seema. Madhya Prant aur Berar mein Bharat Chhodo Andolan ka ek adhyayan. Durgawati.

12. Venkateshwar Rao, M. District associations and their contribution to the socio-economic and political development of Andhra, 1892-1920. Osmania.

RANI DURGAWATI VISHWAVIDYALAYA JABALPUR

No. Estt./93/755

Dated : 11-3-1993

NOTIFICATION

The last date for receipt of applications for various teaching posts for M.B.A. Course as notified vide Advertisement No : Estt./93/699, dated 5-2-1993 is hereby extended upto 6th April, 1993.

B.K. Mishra
REGISTRAR

CLASSIFIED ADVERTISEMENTS

D.M.V.N.S. BANDEKAR COLLEGE OF COMMERCE

POST BOX NO. 20
MAPUSA, GOA

WANTED LECTURERS FOR 93-94

Applications are invited for the post of :

1. Lecturer in statistics - PT - One post
2. Lecturer in Computer systems - FT - One post
3. Lecturer in Business Law : P.T. - One post
4. Lecturer in Com. Geography - P.T. - Lecture basis

The posts at Sl. No. 1, 2, and 3 are advertised for the first time and are reserved for SC/ST candidates only. If suitable candidate from reserved category is not available, then these posts will be filled in by candidates from general category, on temporary basis.

5. Lecturer in Economics - FT - One post
6. Lecturer in History - FT - (to teach FC I) - One post
7. Lecturer in English - FT - One post

These posts at Sl. No. 5 to 7 are advertised for the second time and only SC/ST candidates need apply for the same. No Candidates from general category will be considered for these posts. If suitable candidate from reserved category is not found then the present candidates in the posts will be continued.

Qualifications & Pay Scales :

As prescribed by the Goa University. (Lecturer in B.Law must possess P.G. Degree). The candidate must have passed eligibility test conducted by UGC. In case candidates having passed eligibility test are not available then candidates selected will be appointed on temporary basis till they pass the said test.

Persons who are already employed shall send their applications through proper channel. Break in service if any should be accounted for.

The qualified suitable candidates may apply giving full details with true copies of marklists. Applicants from reserved category should attach true copy of the caste certificate.

Applications complete in all respects should reach the Principal within fifteen days from the date of publication of this advertisement.

G.G. Mayekar
PRINCIPAL

INDIAN INSTITUTE OF TECHNOLOGY KHARAGPUR

Advertisement No. R/2/93

Applications are invited for the following positions, the details of which are given below:

1. **Professor** (Rs. 5100-150-5700-200-7300/-)

Ph.D. with first class academic record throughout and 10 years' teaching/research/industrial experience of which at least 5 years' should be at the level of Assistant Professor/Associate Professor.

2. **Associate Professor** (Rs. 4500-150-5700-200-6300/-)

Ph.D. with first class academic record throughout and 8 years' teaching/research/industrial experience of which at least 3 years' should be at the level of Assistant Professor.

3. **Assistant Professor** (Rs. 3700-125-4950-150-5700/-)

Ph.D. with first class academic record throughout and 3 years' teaching/research/industrial experience.

4. **Visiting Lecturer** (Rs. 3000-100-3500-125-5000/-)

Ph.D. with first class academic record throughout.

Jai Narain Vyas University, Jodhpur

(Establishment Branch)

No. JNVU/Estt/92-93/2124

March 3, 1993

Advertisement No. 156/92-93

Applications are invited on the prescribed form obtainable from the Office of the Registrar, Jai Narain Vyas University, Jodhpur on payment of Rs. 10/- either in cash or through crossed Indian Postal Order payable in favour of Registrar, Jai Narain Vyas University, Jodhpur alongwith self addressed envelope of 27x12 cms. size affixing postal stamp of Rs. 8/- for the following posts so as to reach the undersigned on or before **5-4-1993** upto 4.00 p.m. **APPLICATIONS RECEIVED AFTER DUE DATE SHALL NOT BE ENTERTAINED.**

S.No.	Name of Post	No. of Posts	Category			Pay Scale
			Gen	SC	ST	
(1)	Controller of Examination	1	1	-	-	3200-100-3500-125-4625
(2)	Printer Grade (B)	1	-	1	-	950-20-1150-25-1400-30-1640-40-1680
(3)	Binder Grade (B)	2	-	1	1	800-15-950-20-1250
(4)	Proof Reader	1	1	-	-	1200-30-1560-40-2000-50-2050

Note :

- (1) Details of Qualifications alongwith General Conditions, etc. will be supplied to candidates alongwith application forms.
- (2) The University reserves the right to increase or decrease the number of posts. The University also reserves the right not to fill any or all posts if deemed necessary.

Doongar Dan
REGISTRAR

The above posts carry allowances as per Institute rules.

Departments/Centres and Specialisations : Aerospace Engg.

Aerospace Structure, Control & Guidance, Aerodynamics.

Agricultural Engg.

Agricultural Engineering, Applied Botany, Agronomy and Soil Sciences.

Architecture & Regional Planning

Construction & Management, Visual Arts & Graphic Communication, Industrial Design.

Chemical Engg.

Petroleum Refinery Engineering & Petro-chemicals, Thermodynamics, Transport Processes, Pollution Abatement and Control.

Chemistry

Synthetic Inorganic/organic Chemistry, Biological Chemistry, Chemical Thermodynamics and Electro-chemistry.

Civil Engineering

Structural Engineering, Soil Mechanics and Foundation Engineering, Highway (Transportation Engg), Water Resources Engineering, Environmental Engineering.

Computer Science & Engineering

Computer Networks, Parallel & Distributed Systems, DBMS, AI, Computer Vision, Theoretical Computer Science, Software Engineering, VLSI Systems.

Electrical Engg.

Electrical Machines, Power Electronics, Instrumentation, Energy Engineering.

Electronics And Electrical Communication Engg.

Automation, Computer Vision, Communications, Computer Engineering, Fibre Optics, Microelectronics, VLSI CAD, Microwave and Signal Processing.

Geology & Geophysics

Geochemistry, Petrology, Structural & Sedimentary Geology, Stratigraphy Palaeontology, Economic Geology, Remote Sensing, Exploration Geophysics.

Humanities and Social Sciences

Psychology, Economics, English, Sociology, German, Hindi.

Industrial Engg. & Management

Ergonomics, Quality and Reliability Engineering, Manufacturing Management, Marketing Management, Business Policy.

Mathematics

Algebra, Analysis and Geometry, Computer Science, Statistics and Operations Research, CFD, Elasticity and Cosmology.

Mechanical Engg.

Theory of Elasticity, CAD/CAM, Robotics, Manufacturing Processes, Fluid Mechanics, Bulk Solid Handling.

Metallurgical Engg.

Extractive/Mechanical/Powder/Physical/Foundry/Metallurgy, Corrosion Science & Technology.

Mining Engg.

Mine systems, Underground Coal Mining Methods.

Naval Architecture

Ship Design, Production, Structures and Hydrodynamics.

Physics and Meteorology

Condensed Matter Physics, Optics and Spectroscopy, Nuclear/Particle Physics, Atmospheric Science and Technology.

Cryogenic Engg.

Cryogenic Heat Transfer, Mass Transfer, Superconductivity, Cryo-Preservation.

Materials Science

Development and Processing of Ceramics, Composites, Polymers, Semiconductors and Allied materials.

Rubber Technology

Rubber Product Designs & Engineering, Rubber Processing and Characterisation, Rubber-Plastic Blends.

Rural Development

Transfer of Technology, Rural Development Planning.

The qualifications and experience prescribed above are only the minimum and mere possession of the same does not entitle a candidate to be called for interview. The authority may also consider an applicant for

a lower post other than the one applied for. Candidates with distinguished industrial/Professional experience may be considered without a Ph.D. degree.

Candidates may send application(s) on plain paper with bio-data detailing date of birth, educational qualifications, with marks/grades and year of passing, work experience, present salary, list of publications, names & addresses of three referees and a recent photograph.

A crossed demand draft for Rs. 50/- towards application fee (non-refundable) drawn in favour of IIT, Kharagpur payable at State Bank of India, Kharagpur-721302 should be sent so as to reach the undersigned on or before 24.4.93. SC/ST candidates are exempt from payment of application fee. Attested copies of certificates will be asked only from candidates called for interview.

S. Chander
REGISTRAR

INDIAN COUNCIL OF MEDICAL RESEARCH

(Adv1. No. 13/92, I.C.M.R. Hqrs).

Applications are invited upto 15th April'93 for the post of Sr. Research Officer (Ophthalmology) in the scale of pay of Rs. 3000- 100-3500-125-4500 plus usual allowances as admissible in the Hqrs. Office of the Council.

Qualifications and Experience : Essential : a) M.B.B.S. b) Six years research/teaching experience (two years only for those with a M.D. or M.S. qualification) in Ophthalmology/Preventive and Social Medicine. **Desirable :** M.D./M.S. in Ophthalmology. **Job Description :** Incumbent will be responsible for conducting and monitoring research projects related to Ophthalmology. The functions involve planning, monitoring and implementation of multicentric studies alongwith research management of various studies related to Ophthalmology. Other duties include review of national programmes, publications, reports and research projects.

Age : Below 45 years.

SC/ST candidates allowed relaxation in accordance with Govt. of India rules. Candidate belonging to SC/ST communities will have to furnish certificates from prescribed authority in the required format printed at page 345 of the brochure on reservation of SC/ST in service which can be supplied on demand failing which they will not be entitled to the concession admissible to them, if any. Since it is not possible to call all the eligible candidates for the interview, the applications will be shortlisted for the purpose and the decisions of the Director General will be final. The number of vacancies to be filled may vary at the time of actual selection. In the event of non-availability of suitable candidates for advertised post, the positions can be filled up at lower level. Allowances as per Central Government rules are admissible on the above pay scales. Benefits of pension admissible. Private practice is not allowed. However, NPA as per rules of Council is admissible to medical graduates only. Candidates called for interview will be paid 2nd class rail fare by the shortest route, on production of documents. Applications from employees working in Central/State Govt. Deptt./Public Sector Undertaking and Govt. funded research agencies must be forwarded through proper channel. Application forms can be obtained from the office of the Director General, Indian Council of Medical Research, Ansari Nagar, Post Box No. 4508, New Delhi-110 029. Forms duly completed should be sent to the Director General, Indian Council of Medical Research, Ansari Nagar, Post Box No. 4508, New Delhi- 110 029 with a crossed IPO for Rs. 8/- being application fee payable to the Director General, ICMR, New Delhi. SC/ST candidates are exempted from this payment. Incomplete and late application or application without fee will not be entertained.

UNIVERSITY OF POONA

Advertisement No. 12

Applications are invited for various teaching posts as under :

Sr. No.	Department	Posts Open/Reserved for	Subject/specialisations
1	2	3	4

PART-A – PERMANENT POSTS

PROFESSORS (11)

1.	Chemistry	ST**	Inorganic Chemistry
2.	Physics	SC	Accelerator and Nuclear Physics Atmospheric Space & Plasma Physics/Material Science & condensed matter/Microwaves.
3.	Physics	Open	Accelerator and Nuclear Physics/Material Science & condensed Matter/Biophysics Non-linear Phenomena and Lasers.
4.	Zoology	ST**	Entomology
5.	Zoology (Biotechnology)	SC	Biochemical Engineering
6.	Zoology (Biotechnology)	SC	Biochemistry of Macro-Molecules/Molecular Biology
7.	Geography	ST	Economic Geography/Settlement Geography.
8.	Geography	SC**	Geomorphology
9.	Centre of Advanced Study in Sanskrit	SC**	Veda and/or Vyakarana
10.	History	SC	Medieval or Modern Indian History
11.	Library & Information Science (Librarian & Professor)	Open	

READERS(10)

12.	Zoology	ST**	Development Biology
13.	Geography	ST**	Climatology
14.	Mathematics	ST**	Algebra/Analysis/Topology/Applied Mathematics.
15.	Geology	Open	Geochemistry/Exploration Geophysics.
16.	Sanskrit & Prakrit Languages	ST	Veda/Vyakarana/Vedanta/Sahitya
17.	(Centre of Advanced Study in Sanskrit)	Open	Indian Philosophy or Rhetorics
18.	Foreign Languages	ST**	French
19.	Law	ST**	Commercial/Industrial/Labour/Constitutional and Administrative Laws/Criminal Laws/Personal Laws/Indian & English Legal History. Taxation Law
20.	Law	Open	
21.	Communication Studies	DTNT	Mass Communication

LECTURERS (8)

22.	Chemistry	SC**	Physical Chemistry
23.	Microbiology	SC@	Molecular Biology/Applied Microbiology
24.	Zoology	ST*	Biophysics or Genetics
25.	Mathematics	ST**@	Applied Mathematics/Geometry/Differential Equations Numerical Analysis/Algebra. Preference will be given to candidates with Computer experience.
26.	Statistics	Open	Statistical Inference or Probability or Stochastic Processes.
27.	Geology	ST**	Economic Geology & Mineralogy
28.	Hindi	DTNT	Drama & Dramaturgy
29.	Lalit Kala Kendra	Open	Music/Dance/Dramatics

NON PERMANENT POSTS

PROFESSORS (7)

30.	Physics	Open	Atmospheric Space and Plasma Physics/Material Science and condensed Matter/Biophysics/Non Linear Phenomena and Lasers.
31.	Politics & Public Administration	DTNT**	Political Thought in Maharashtra Regional Area.
32.	Academic Staff College (Director)	Open	Social Sciences/Humanities/Commerce/Science
33.	Continuing Adult Population Education & Extension Work (Director)	Open	Adult/Continuing/Community/Extension Education/Community Development.
34.	Commerce and Management Science (Co-operation and Rural Development) (Padmashree Vikhe Patil Chair) (Consolidated Salary)	Open	Commerce/Economics/Co-operation Management/Co-operative Banking and Finance.
35.	Economics	Open	Monetary Economics/Agro-Industrial Economics/Economic Theory.
36.	Interdisciplinary School of Health Sciences.	Open	Medical Anthropology, Community Health, Biometry, Biochemistry, P.S.M.

READERS (3)

37.	Physics	ST**	Atmospheric Science
38.	Interdisciplinary School of Health Sciences.	Open	Biostatistics/Biochemistry/Physiology, Clinical Nutrition.
39.	Instrumentation Science	Open	Process Control Instrumentation/Power Instrumentation.

LECTURERS (6)

40.	Statistics	Open	Probability/Mathematical Statistics/Applied Statistics/Biostatistics.
41.	Computer Science (B.Sc. applied)	Open	B.Tech./M.Tech. in Computer Science or equivalent degree.
42.	Politics and Public Administration.	Open	Politics & Public Administration
43.	Continuing Adult Population Education and Extension work. (Project Officer P.E.R.C)	Open	Adult/Continuing/Community/Community Extension Education/Development/Population Education.
44.	Commerce and Management Science (MBA)	SC	Commerce/Management
45.	Interdisciplinary School of Health Sciences	Open	Life Sciences/Community Health PSM, Physiology, Biochemistry.

Pay Scales

Professor = Rs. 4500-7300 Reader = 3700-5700 Lecturer = 2200-4000

** Indicates reserved only for the candidates belonging to SC/ST/DTNT as mentioned against the post, hence applications of such candidates will only be considered.

@ Indicates, the post is temporary but likely to be made permanent.

General Qualifications & Experience :

Professor : An eminent scholar with published work of high quality actively engaged in research with 10 years' experience is postgraduate teaching and/or research at the University/National Level institutions, including experience or guiding research of doctoral level.

OR

An outstanding scholar with established reputation who has made significant contribution to knowledge.

Reader : Good academic record with a doctoral degree or equivalent published work. Candidates from outside the University system in addition shall also possess atleast 55% marks or an equivalent grade at the Master's degree level. Eight years experience of teaching and/or research including upto 3 years for research degrees and has made some work in the areas of scholarship as evidenced by quality of publications, contribution to educational renovation, design of new courses and curricula.

Lecturer : Good academic record with atleast 55% marks or an equivalent grade at Master's degree level in the relevant subject from an Indian University or an equivalent degree from a Foreign University.

Instructions :

Candidates besides fulfilling the above qualifications should have cleared the eligibility test for Lecturers conducted by UGC, CSIR, or similar test accredited by the UGC.

Candidates who wish to be considered for more than one post must make separate applications for each of the posts.

The candidates belonging to open categories who fulfil the conditions of qualifications, experience, etc. may send their applications for the post reserved for candidates belonging to SC/ST/DTNT. Their applications will be considered if the suitable candidates are not available from the particular category of the Backward Class.

Candidates are requested to send the applications in the prescribed form in two copies, so as to reach the University office on or before 30th April, 1993. Sets containing application forms with two copies are available in Publication Section of the University at the cost of Rs. 25/-. Application form will be sent if self-addressed envelopes (23 cms x 20 cms) with stamp of Rs. 7/- and postal order of Rs. 25/- is sent to the Registrar, University of Poona, Ganeshkhind, Pune - 411007.

Notes :

1. Candidates belonging to reserved category must produce a caste certificate to that effect from the Magistrate specifying clearly the name of community to which he/she belongs and he/she will be considered only if his/her caste is enlisted in the approved list of Maharashtra Government.
2. One who is already employed must submit his/her application through proper channel.
3. Some of the conditions may be relaxed in case of exceptionally capable candidates.
4. No applications will be entertained received after last date and incomplete form will not be entertained.
5. The University will not be responsible for postal delay if any.
6. The appointment of selected candidates will be made subject to the condition that he/she may have to work at Pune or any place under the jurisdiction of the Poona University.

The details regarding specialisations and special qualifications and other requirements for each post will be available along with the application form.

Dr. M.D. Nalawade
REGISTRAR

**Kuriakose Elias College,
Mannanam**

W A N T E D

Lecturer in Commerce - T.F.S - Leave vacancy - Community Quota. The post is subject to sanction by Mahatma Gandhi University, Kottayam and review under the U.G.C. scheme. **Qualification** : 1st or 2nd class Master's Degree in the concerned subject with not less than 55% marks and a pass in the UGC eligibility test. **Age** : According to Government service and University Regulations. Apply to the Principal within one month from the date of publication of this notification. Application form and other details can be had from the college office on payment of Rs. 50/- in person or Rs. 60/- by post.

Mannanam

Principal
Date : 10.3.93



SCHOOL OF MANAGEMENT INDIAN INSTITUTE OF TECHNOLOGY, KHARAGPUR

A School of Management has been set up at IIT, Kharagpur with the financial support from Mr. Vinod Gupta, an alumnus of the Institute, and from the Government of India. Besides conducting Executive Development Programmes and carrying out Industrial Consultancy work, the School will be offering an 18 month Master of Business Management (MBM) Programme with effect from July 1993.

Faculty Appointments : The School invites faculty in the areas of Accounting and Finance, Marketing, Human Resources Management, International Management, Business Policy, Labour legislation and Computer and Systems Management. The faculty will be appointed on a contract basis at the level depending on the academic background and attainment of the applicant. A Ph. D degree in the specialisation is required. This requirement may be waived for applicants with rich practical experience. Retired personnel from industry and educational institutes will also be considered. Applications with full particulars, along with a demand draft of Rs. 50 drawn on SBI in favour of IIT, Kharagpur may be sent to the Director IIT, Kharagpur 721 302, before April 30, 1993.

Admissions : Practising managers from industry with a minimum of two years of experience will be admitted to this programme on the basis of their academic record, and performance in an interview to be conducted at IIT, Kharagpur. Candidates applying should be sponsored by their organisations and must have a Bachelor's Degree in any branch of Engineering. Senior managers/executives with a Post Graduate degree in Science/Arts will also be considered. Those admitted under this category are expected to be financially self supporting or get assistance from their sponsoring organisations. For further details write to "The Coordinator, School of Management, Department of Industrial Engineering and Management, Indian Institute of Technology, Kharagpur 721 302 India" before April 30, 1993.

A limited number of students with a Bachelor Degree in any branch of Engineering will also be eligible for admission to this MBM programme directly on the basis of their performance in GATE, and an interview to be conducted at IIT, Kharagpur. Candidates thus admitted will be eligible to receive the Institute scholarship of Rs. 1800 p m. They are advised to respond to the forthcoming advertisement for admissions to the M.Tech programmes of the Institute.

INDIAN COUNCIL OF MEDICAL RESEARCH

Nominations/applications are invited from distinguished retiring scientists engaged in research in the field of biomedicine for consideration for appointment as Emeritus Medical Scientist under the Council. Full particulars can be obtained from the office of the **Director General, Indian Council of Medical Research, Ansari Nagar, Post Box No. 4508, New Delhi - 110 029**. The Scientists who are going to retire upto 31st December, 1993 need only apply for the appointment as Emeritus Medical Scientist under the Council. Last date for receipt of applications is **20th May, 1993**.



INDIAN INSTITUTE OF TECHNOLOGY, MADRAS

ADMISSIONS TO M.TECH (SPONSORED), M.Sc., Ph.D., M.S., M.S. (SPONSORED) AND M.S (Entrepreneurship) PROGRAMMES 1993-94

I. POST-GRADUATE PROGRAMME

1. M.Tech – Sponsored (without institute scholarship) :

M.Tech : In Aerospace Engg., Applied Mechanics (Engg. Mech, Industrial Tribology, Maintenance Engg and Management, Biomedical Engg.), Chemical Engg., Civil Engg., Computer Science & Engg., Electrical Engg., Humanities & Social Sciences (Industrial Management), Mechanical Engg., Metallurgical Engg., Physics (Solid State Technology) and Ocean Engg.

Minimum qualification and experience :

- (a) 1st Class or 60% (55% for SC/ST) marks aggregate in Bachelor's degree in Engg./Tech or M.Sc. for certain areas and
- (b) minimum 2 years (3 years for Industrial Management) professional experience (excluding training period) after graduation at the time of joining.

Candidates sponsored with leave and full salary by DST recognised R & D Institutions/Industries only are eligible.

2. M.Sc. : Chemistry/Mathematics/Physics

Minimum qualification :

1st class or 60% (55% for SC/ST) marks aggregate or equivalent in B.Sc.

M.Sc. Chemistry : Chemistry main and Maths & Physics ancillaries

M.Sc. Mathematics : Maths Main

M.Sc. Physics : Physics main and Maths as one of the ancillaries.

II. RESEARCH PROGRAMME

A. FULL TIME WITH SCHOLARSHIP

1. Ph.D. : In Chemistry/Mathematics/Physics/Humanities & Social Sciences (Economics/German/English/History/Psychology).

Minimum qualification :

- (a) 1st class or a minimum CGPA 6.5 of Master's degree in the relevant area of Science/Humanities and Social Sciences or equivalent with Valid GATE score of 70 percentile or UGC/CSIR Fellowship tenable from the current year or
- (b) Master's degree in Engg/Tech with 1st class or CGPA 6.5 or equivalent.

2. Ph.D. and M.S. : In Aerospace Engg, Applied Mech, Chemical Engg, Civil Engg, Computer Science & Engg, Electrical Engg, Humanities & Social Sciences (Industrial Engg & Industrial Management), Mechanical Engg, Metallurgical Engg and Ocean Engg.

Opportunities also exist for research work in the following centres :

Centre for Bio-Science and Bio-Technology, Materials Science Research Centre, Regional Sophisticated Instrumentation Centre, FRP Research Centre and Centre for Systems and Devices.

Minimum qualification :

Ph.D. a) 1st class or minimum 6.5 CGPA in M.Tech/ME.

- b) For certain Depts, 1st class or minimum 6.5 CGPA in M.Sc. with a valid GATE score of 70 percentile or UGC/CSIR Fellowship tenable for the current year.

M.S. a) 1st class or minimum 6.5 CGPA of Bachelor's degree in Engg/Tech. with a valid GATE score of 70 percentile or CSIR Fellowship tenable for the current year in the relevant areas.

- b) For certain Depts, 1st class or minimum 6.5 CGPA of Master's degree in Sciences/Humanities & Social Sciences with a valid GATE score of 70 percentile or UGC/CSIR Fellowship tenable for the current year in the relevant areas.

3. M.S. (Entrepreneurship)

Minimum qualification : As indicated above for M.S. Objective of the programme is to expose young engineers to the multi-faceted field of entrepreneurship development and to provide them with excellent facilities for developing products in high-tech areas with market potential. During the course of this programme, the candidates are encouraged to start their own industries to manufacture the products they have developed and are also given advice in getting support from financial institutions.

4. M.S. – SPONSORED (without institute scholarship)

Candidates sponsored with leave and full salary by DST recognised R & D Institutions/Industries only are eligible. The minimum residential requirement for them is 18 months (Full time). Minimum qualification as indicated above for M.S. excepting that the candidate need not have GATE Score.

5. SAIL Talent Research Fellowship

Candidates applying for Ph.D. in the Depts. of Metallurgical Engg and Electrical (Electronics) Engg/Computer Science & Engg are eligible for SAIL fellowship on topics of relevance to SAIL. Candidates who wish to be considered for the above mentioned fellowships may indicate their choice by a separate covering letter.

B.. EXTERNAL REGISTRATION FOR M.S/Ph.D. PROGRAMMES (without institute scholarship) :

Candidates sponsored by Institutions/Industries recognised by DST will be considered for admission. They must possess minimum academic qualification as prescribed for full time candidates in all respects.

Faculty of a University/College are not eligible to apply under this scheme.

Upper age limit : For Ph.D - 45 years, for MS - 35 years.

III. HOW TO APPLY

Candidates may apply on plain paper to the DEPUTY REGISTRAR (ACAD.), IIT, MADRAS 600 036 for Application Form separately for M.Tech (Sponsored), M.Sc., M.S., M.S. (Sponsored), M.S. (Entrepreneurship) and Ph.D. programmes. Each request for application form and Brochure should be accompanied by a Demand Draft for Rs. 25/- drawn in favour of IIT, Madras on a Nationalised Bank payable at Madras and 2 slips (5 cm. x 10 cm.) with full address of the applicant in BLOCK LETTERS.

IV. LAST DATES – Request for Application Form – By post 05th April 1993

– At the Institute Counter 19th April 1993

Receipt of completed Application Form – 21st April 1993

DEPUTY REGISTRAR (ACAD.)



UNIVERSITY OF DELHI

DELHI-110 007

Advt. Estab.-IV/Advt. 135/93 Dated : March 12, 1993

Applications on the prescribed forms are invited for the following posts in various Departments/Centres of the University, so as to reach the REGISTRAR, UNIVERSITY OF DELHI, DELHI-110 007 latest by April 13, 1993:

1. ANTHROPOLOGY

Reader (1), Lecturers (3)

Special/Desirable Qualifications :

Reader : Social Anthropology, specialisation in Social Anthropology with extensive field work experience in Tribal Societies with focus on Tribal Culture/Cultural Ecological Studies in Tribal Societies.

Lecturer (1) : Physical Anthropology

Research & Publication in Physical Anthropology with evidence of work in Paleo-Anthropology

Lecturer (2) : Pre-Historic Archaeology

Research & Publication in Pre-Historic Archaeology with extensive field work and knowledge of material culture

Lecturer (3) : Social Anthropology

Specialization in Social Anthropology with extensive field work experience in Tribal Societies.

2. AFRICAN STUDIES

Reader (1) (Sociology)

Special/Desirable Qualifications :

- a) Doctor's degree or published work on Africa;
- b) Field work in Africa or visiting assignment at an African University;
- c) Knowledge of an African language.

3. CHINESE & JAPANESE STUDIES

Professor (1) (Chinese),

Lecturer (1) (Japanese)

Special/Desirable Qualifications :

Professor : a) Chinese Society and b) Comparative study of China and India.

Lecturer : a) Experience in teaching Japanese language through Audio Visual methods; b) Level of the Japanese Language proficiency test conducted by Japanese Foundation.

4. COMMERCE : Reader (1), Lecturer (1), Research Associates (2)

Special/Desirable Qualifications :

Reader : Specialization in International Business. Lecturer : Organisational Behaviour/Human Relations.

5. ENGLISH : Professor (1)

6. GERMANIC & ROMANCE STUDIES

Reader (1) (Italian)

Special/Desirable Qualifications :

Specialization in Literature

7. GEOLOGY : Professors (2), Research Associate (1)

Special/Desirable Qualifications :

Professor (1) : Specialisation in Petrology/Economic Geology/Biostratigraphy.

Professor (2) : Aptitude in Geological Instrumentation.

Research Associate : Aptitude in Geological Instrumentation & Advanced Microscopy.

8. HINDI Professor (1), Reader (1), Lecturer (1)

Special/Desirable Qualifications :

Reader : With specialization in Linguistics with reference to structure and development of Hindi Language.

Lecturer : Experience of teaching Hindi as a second language & experience of translation from English to Hindi and vice-versa.

9. LINGUISTICS : Professor (1), Readers (2), Lecturers (2)

Special/Desirable Qualifications :

Professor : Specialization in Socio & Applied Linguistics. A sound knowledge of theoretical Linguistics.

Reader (1) : In Theoretical Linguistics Specialization in Government and Binding/Generalized Phrase Structure Grammar/Lexical-functional Grammar/Montague Grammar. Published evidence required.

Reader (2) : Generative Morphology/Generative Phonology with sub-specialization in Auto Segmental Phonology or Matrical Phonology/Socio-Linguistics Theory/Neuro-Linguistics. Published evidence required. For the position in Neuro-Linguistics, a D.M. degree in Neurology with special area of interest in Speech Pathology and Linguistic Aphasia with at least a Diploma in Linguistics.

Lecturer (1) : Language Teaching/Language Testing with a sound background in syntax, phonology and morphology.

Lecturer (2) : Historical Linguistics with Indian Grammatical Tradition.

10. MODERN INDIAN LANGUAGES

Reader (1) (Gujarati), Lecturers (3)

Special/Desirable Qualifications :

Reader : Comparative Literature

Lecturer (1) : Telugu Language Teaching (Comparative Literature)

Lecturer (2) : Tamil (Comparative Literature)

Lecturer (3) : Malayalam (Comparative Literature)

11. MUSIC : Readers (3), Lecturer (1)

Special/Desirable Qualifications :

Readers : One post each for Vocal Hindustani Music, Vocal Karnatak Music and Instrumental Hindustani Music : good performing ability with a comprehensive repertoire of traditional ragas and forms.

12. PHYSICS & ASTROPHYSICS : Reader (1)

13. PSYCHOLOGY : Professor (1), Reader (1), Research Associate (1), (All under DSA Programme @@)

Special/Desirable Qualifications :

Professor : Applied Social Psychology.

Reader : Cognitive Process.

14. SANSKRIT : Professor (1), Lecturer (1)

15. SANSKRIT WORK : Professor (2), (one under D.S.A.), Readers (3) (one under D.S.A.), Lecturer (1)

Special/Desirable Qualifications :

Professor (1) : Teaching/Work experience in Philosophy of Social Work/Social Work Research/Methods of Social Work/Social Administration/Gandhian Studies/Human Resource Development.

Professor (2) : Experience of Teaching/Field Work in Social Policy and Social Development/Social Work Research.

Readers (1&2) : Experience of Teaching/Field Work in Social Work Educa-

tion/Community Organisation and Community Development/Fields of Social Work/Social Work Research and Statistics.

Reader (3) : Teaching/Work experience in Women's Studies/Social Services and Social Security Community Organisation.

Lecturer (1) : Teaching/Work experience Field Work in Human Growth and Development/Fields of Social Work.

16. ZOOLOGY : Lecturers (2)

Special/Desirable Qualifications :

Specialization in any one of the following six fields :

- 1. Developmental Biology; 2. Animal Physiology; 3. Insect Toxicology; 4. Insect Physiology; 5. Chronobiology; 6. Parasitology.

17. REFERENCE : Advt. Estab. IV/Advt. 134/92 dated October 04, 1992 :

03) Sociology, Lecturers (3) (Read 5 instead of 3, (4 permanent vacancies & one leave vacancy)

13) Campus Law Centre,

Research Associates (2) (Read Department of Law instead of Campus Law Centre)

@@ Upto 4.5.1994.

* Upto 31.3.1997.

SCALES OF PAY :

PROFESSOR : Rs. 4500-150-5700-200-7300, READER : Rs. 3700-125-4950-150-5700, LECTURER : Rs. 2200-75-2800-100-4000, RESEARCH ASSOCIATE : Rs. 2200-100-2700 OR Rs. 2700-100-3200 OR Rs. 3200-100-3700 OR Rs. 3700-125-4325 (Depending upon the recommendations of the Selection Committee)

NOTE : i) Lecturer : In each subject one out of five posts (at least one) is meant for candidates belonging to SC/ST. If no suitable candidate is available, the post will be filled up by any other suitable candidate; ii) Professor & Reader : Other things being equal preference will be given to SC/ST candidate; iii) It will be open to the University to consider names of suitable candidates who may not have applied; iv) Number of posts is given within parenthesis against each post.

All the above posts except of Research Associate carry D.A., C.C.A., H.R.A. etc. as are admissible under the rules in force in the University from time to time.

The details regarding prescribed qualifications and application forms for various posts can be had from the

Establishment Branch - IV, (Room No. 205), New Administrative Block, University of Delhi, Delhi-110007 during working hours (09.30 A.M. to 12.30 P.M. and 02.00 P.M. to 5.00 P.M.) either personally or by sending a self addressed and postage stamped envelope worth Rs. 8/- (size 13 cms x 28 cms) at the above address.

PROF. S.K. WASAN

REGISTRAR

DELHI-110007,
MARCH 12, 1993.

University News

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Rs. 5.00

National Youth Festival



Prof. K.B. Powar, Secretary General, AIU, lighting the lamp to mark the inauguration of the Inter-University National Youth Festival held at Nagpur University recently. He is flanked by Prof. P.L. Bhandarkar, VC, Nagpur University (left) and Dr. S.Y. Quraishi, Joint Secretary, Department of Youth Affairs & Sports, Govt of India (right).

INTERNATIONAL INSTITUTE FOR POPULATION SCIENCES

Govandi Station Road, Deonar, Bombay 400 088

Admission Notice

Applications are invited for admission to the following teaching programmes of the Institute for the academic session 1993-94 to commence from 12th July 1993 :

1. MPS (MASTER OF POPULATION STUDIES)
(One year full time course)
2. M.Phil. (MASTER OF PHILOSOPHY IN POPULATION STUDIES)
(One year full time course)
3. Ph.D. IN POPULATION STUDIES

Eligibility

1. **For MPS :** Master's degree of a recognised University in any of the following subjects : Statistics, Mathematics, Economics, Sociology, Anthropology, Psychology and Geography. OR Master's degree in subjects other than mentioned above with some experience in population or allied fields.

2. **For M.Phil. :** i) Master's degree in Population Studies from IIPS or an equivalent degree from any other university with at least 55 percent marks in the aggregate. OR ii) Those who have obtained a Certificate/Diploma in Population Studies/Demography from the Institute according to the old syllabus and have a Master's degree in the relevant subjects.

3. **For Ph.D. in Population Studies :** M.Phil degree in Population Studies. In special cases, admission to Ph.D. may be given to candidates on the condition that they have to complete M.Phil.

Those who have been offered M.Phil/Ph.D. fellowship by UGC/ICSSR etc., for a period of at least 2 years, may be admitted directly. They will, however, be required to obtain the MPS degree of the Institute within one year.

Fellowships : Twenty fellowships are offered for MPS at Rs. 800/- p.m., 10 fellowships for M.Phil at Rs. 900/- p.m. and 4 fellowships for Ph.D. at Rs. 1,800/- p.m. for Indian students who have passed national level tests in Population Studies conducted by UGC or any equivalent body. However, the Institute may offer fellowships @ Rs. 900/- p.m. to Ph.D. candidates in case the candidates with JRF qualifications are not available. The M.Phil. fellowship carries a contingency of Rs. 3,000/- per annum and Ph.D. fellowship Rs. 5,000/- per annum.

Three seats are reserved for scheduled caste and one for scheduled tribe candidates.

Application forms can be obtained from the office of the Assistant Registrar (Academic), International Institute for Population Sciences, Deonar, Bombay -400 088 free of cost. The request for application form should accompany a self-addressed envelope of size 25 x 12 cms. affixed with postage stamps of Rs. 4/- . The envelope should be superscribed "APPLICATION FOR ADMISSION".

The last date for receipt of completed application form is 30th April 1993.

K.B. PATHAK
DIRECTOR

UNIVERSITY NEWS

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IN THIS ISSUE

67th Annual Meeting of AIU :	
a) Presidential Address	1
b) Inaugural Address	6
c) Welcome Address	8
Making the System Work	10
Management of Educational Institutions	11
University and Leadership	14
The Relevance of Ambedkar	15
Convocation	
Sardar Patel University, Vallabh Vidyanagar	17
Campus News	
Seminar on Haryana Colleges	21
Counselling Centres for Computer Courses	22
Question Bank on Rural Development	22
French Canadian Studies Seminar	23
Agriculture	
Farm Development and Drainage	25
News from UGC	
Countrywide Classroom Programme	25
Book Review	30
Research in Progress	35
Theses of the Month	36
Classified Advertisements	41

Opinions expressed in the articles
are those of the contributors and do
not necessarily reflect the policies of
the Association.

Editor :
SUTINDER SINGH

ASSOCIATION OF INDIAN UNIVERSITIES 67th Annual Meeting

Excerpts from the

PRESIDENTIAL ADDRESS

by

Dr. (Miss) Armaity S. Desai

Director, Tata Institute of Social Sciences

In my address today, I will focus on the current issues of major concern to the university, which are (1) finance, (2) the manipulation of the university system by internal and external forces, (3) the right to education, and (4) the responsibility of the university to the public which supports it. While the major commitment of the university is to improve the quality of its teaching and research, it should also reach out to the marginalised people who will themselves never see the portals of a university, but who necessarily support it through the indirect taxes they pay. Hence, the focus of my presentation will be on the major problems that plague the university system, as also its commitment to go beyond its traditional role in the context of our social realities.

Finance

In the past one year, as President of the Association of Indian Universities, I have been a participant in several meetings which have been concerned with university financing and university structures. These have included the meetings of the University Grants Commission, the Ministry of Human Resource Development, the Planning Commission, the Central Advisory Board of Education (1986) to consider the National Policy on Education with respect to the modifications introduced in 1992, as well as a series of meetings of the Ministry of Human Resource Development to consider the Report of the Committee, appointed by the University Grants Commission, "Towards New Educational Management" (1990), of which Vice-Chancellor Prof. A. Gnanam was the Chairperson. The University Grants Commission and the Association of Indian Universities had also held a colloquium on the recent Judgment of the Supreme Court on the issue of capitation fees delivered by Justice Kuldip Singh in the case of Mohini Jain vs the State of Karnataka. Finally, our Association also prepared a Memorandum which reflected many of the concerns stated by the Vice-Chancellors. It was personally handed over to the Honourable Minister for Finance by an AIU delegation, consisting of the President, Secretary and a few Vice-Chancellors representing central, state and deemed universities. As a meeting could not be arranged with the Honourable Minister, Human Resource Development, it was forwarded to him. All these meetings quite unilaterally reflect the seriousness and magnitude of the present crises in higher education.

Management of education emerges as the key challenge in the coming decades as we move from this century to the next. We are concerned with both the problems of quantity and quality in the management of a sector which has to deal basically with people. The objective is to reconcile individual and personal goals of the graduate with the national goals of equity and social justice through a process of sustainable development. Placed in such a framework, education must become an instrument of change. It must not introduce a new consumer class which gets richer to achieve its individual goals, while the masses continue in a state of abject poverty and exploitation. Our educational policies should not result in supporting the more privileged classes, who are able to enter education due to the advantages they have gained from personal low cost investment in higher education, while the per capita public expense on them is actually much higher.

Speaking of future generations, the document on the National Policy of Education states that, "They have to be imbued with a strong commitment to humane values and to social justice"¹ which is hoped to be promoted through education. Hence, we look upon education as a potent instrument for class and gender equity and not polarisation. The document further states :

The new Policy will lay special emphasis on the removal of disparities and to equalise educational opportunity by attending to the specific needs of those who have been denied equality so far.²

On women's equality, it states :

Education will be used as an agent of basic change in the status of women. In order to neutralise the accumulated distortions of the past, there will be a well-conceived edge in favour of women. The National Education System will play a positive role in the empowerment of women.³

These statements have considerable implications for financing of higher education. The Government cannot make these crucial policy statements (enshrined in the NPE), and have them tabled in both the Houses of Parliament (August 19, 1992), while at the same time express its helplessness in the allocation of adequate funds to this sector, which have remained below 3 per cent of the national income. The NPE states :

The Nation as a whole will assume the responsibility of providing resource support for implementing programmes of educational transformation, reducing disparities, universalisation of education, adult literacy, scientific and technological research, etc.⁴

This is possible only if allocations go beyond the 3 percent stagnant figure on which this country has been stuck far too long. Thus far, the exercise has resulted only in manipulating the money within the allocation, arbitrarily reducing from one subsector to another within the educational system. The NPE objectives will not be achieved with such manipulations with the same parameters.

Internal and External Pressures on the System

In his Letter of Submission to Dr. Yash Pal, the former Chairman of the University Grants Commission, Prof Gnanam said :

A University has now a plurality of objectives and has to function as an instrument of National Development in all its dimensions, besides its traditional role of generation and transmission of knowledge.⁵

He has gone on to list the principles and approaches of the Committee on "Alternate Models of Management," which include, among others, freedom and responsibility to innovate in teaching, research and extension, inter-disciplinary and multi-disciplinary courses and research; participation, decentralisation, autonomy and accountability in management, insulation of the universities from internal and external pressures – bureaucratic, political and others – and depoliticisation of various university bodies/authorities. The first few are very much within our purview and it is the responsibility of Vice-Chancellors to implement them. However, the removal of internal and external pressures and depoliticisation are within the larger social context of power, political and bureaucratic. Such internal and external pressures, on the present day university system, prevent it from fulfilling its mandated purpose. For instance, Vice-Chancellors are appointed and removed at will, and interim charge given to persons from the bureaucracy, that is, the civil services, rather than to academicians within the university. The AIU has registered its protest against such manipulations of the system. Colleges are set up by those who have political power in spite of the university's decision not to give recognition; and political judgment rather than academic opinion prevails in the various university bodies. Under such circumstances, the system can hardly be expected to create a serious academic environment and deliver quality education.

Required Policy Supports

To translate into reality the ideals of education as expounded in the NPE, the funding of education will be the key element, and its protection from external and internal manipulation is the important corollary. If universities have to survive to fulfil their purpose, cer-

tain policy supports are essential. The NPE can assure it, if the Government and the peoples' representatives, who endorse it, mean to implement what is stated in this official document. The policy supports required are the following :

Increase in Allocation

There should be a deliberate increase in the proportion of the national income for education by a reallocation of priorities. A small amount of diversion from sectors that are called "high priority", such as defence, among others, would not substantially affect these sectors. Talking of defence, in fact, there is no better defence than an educated citizenry! Moreover, today's wars require not large armies but technologists and technicians produced by the education system, though, we hope, that is not the aim of the education system. The NPE itself acknowledges the need for increased allocations :

....the outlay on education will be stepped up to ensure that during the Eighth Five Year Plan and onwards, it will uniformly exceed 6 percent of national income.⁶

Operationalising the Placement of Education on the Concurrent List

The Constitutional Amendment of 1976 placed Education in the Concurrent List. The NPE states that this :

was a far-reaching step whose implications – substantive, financial and administrative – require a new sharing of responsibility between the Union Government and the States in respect of this vital area of national life.⁷

Yet, apart from attempts to further control universities through centralised fiat, there is no visible attempt to increase the share of Central Government finances to all universities, especially the state universities, state supported deemed universities and affiliated colleges which bear the burden of the lion's share of 88 percent of university enrolment. This aspect, namely Central Government financing, requires closer attention if the NPE is to be successfully implemented. The Finance Commission must also earmark specific allocation for the State sector in education.

We have no dearth of ideas. Many universities have indeed worked creatively and have taken progressive steps in education. However, we are short on funding to translate both ideas and quality into reality. Good management, control of wasteful expenditure and removal of ostentation, can yield some results, but the money these will yield will not be adequate for the need fulfilment of the type of education envisaged by the

NPE. When education is placed on the Concurrent List, affirmative action is required to make it a reality.

Finance Commission on Higher Education

It is also necessary to define the basic quantum of assistance which the universities can count on from the Government. Ad hocism plagues the system, creates instability, leads to demoralisation and inability to take the necessary firm steps forward. The result is there for all to see in the gradual deterioration of the university system. While adequate funding is not a sufficient condition, it is a necessary condition to ensure the qualitative development of universities. The need to constitute a special Finance Commission has been made, with a brief to assess the genuine needs of universities and recommend the means to meet them.

There has been a partial response to it. A high powered committee has been constituted by the University Grants Commission, by its circular No. F.1-78/92(CPP II), dated November 11, 1992, "to cover central and deemed universities, Delhi colleges and technical institutions funded by the Government of India and to make recommendations about their financial needs and systems for the future." However, the large bulk of universities are the State universities which should also be included in any policy related to financing of higher education. It would be totally inequitable to leave them out. Besides, university systems include affiliating and non-affiliating structures (Central, State and Deemed), universities in metropolitan areas and those in backward or hilly areas, those with a century of stability and those not even a decade old. All these have specific and differential needs which should be taken into account in determining the grants, but this exercise is rarely done. Hence, it is very timely that a Commission for Higher Education thoroughly reviews the total situation and makes the necessary suggestions for determining the financial needs of universities.

In no way this would mean that we undermine the right to universalisation of elementary education or education of adult illiterates. In fact, the one is contingent on the other and, hence, a holistic systemic view will have to be taken rather than the current view which juxtaposes one part of the sub-system, that is higher education, against the rest. Surely, it defies the very systemic nature of such structures to place sub-systems in conflict of interest rather than viewing each as necessary for the support and enhancement of the other. Primary education needs teachers and they require higher education. Success at primary stage will lead to the expansion of secondary education, which will have inevitable implications for higher education. Hence, only a holistic view can save the system from the danger of developing schisms and further chaos.

The time has come for the Governments – Central and State – to pause and confront the situation faced every day by the universities in their struggle to meet the demands of ever-increasing numbers who knock on their doors for access. The obverse side of this demand is development of an educational system which is suitable to the national needs; of a relevant curriculum, of research related to the country's requirements, and of extension activities which have also come to have a price tag attached to them. Regrettably, the present policies have already created chaos in the university system, even in the Centrally administered ones, which hitherto were sheltered from them. Hence, instead of promoting education, the Vice-Chancellors are perpetually preoccupied with problems of a hand-to-mouth existence.

Unless steps are taken to view the system's needs as a whole, in their variegated dimensions, the expected results will not be forthcoming.

Ensuring Autonomy of Universities

Ensuring autonomy, and removing external interference and politicisation of the system are equally required as policy supports for the effective functioning of the system. Populist measures are mere indulgences which affect the system and should be abjured.

Policy Supports for Generating Resources

Today, the system is being asked to generate its own resources but, to do so, the Government has provided no policy supports that this task requires.

a) To date, in spite of statements, universities have not received a response from the Government to their demand that all the funds they raise will not be deducted against the allocated grants. There will be little incentive to raise funds if the university is not assured of minimum funds for its regular maintenance expenditure for which it cannot attract funding.

b) Universities must be freed from age old constrictions on investments, in favour of those which would yield better returns, instead of the permissible 6 and 8 percent as at present. In these times of a market economy, such restrictions are anachronistic and must be immediately removed by a Government Resolution/Order.

c) Donations to education must be made 100 percent tax exempt. The donor-donee relationship has a meaning, whereas a faceless tax system does not. The tax system can neither regulate nor replace the inherent urge to give to a cause of one's choice more generously than through a legally enforced system. Instead of encouraging such spontaneous acts of benevolence, the

Government resists such a suggestion on the grounds that it would deprive its exchequer of dues through taxation. In fact, it should show a positive willingness to promote the flow of private funds into public services, such as education, health or welfare, through specially created incentives.

d) Grants for the purchase of books, journals and equipment from overseas must be tied to the fluctuations in the rate of the rupee. If a price has to be paid for structural adjustments, should it be paid by the university or business to whom concessions are announced daily? Some rescaling of priorities in the process of structural adjustment need reflection, since the transition to a market economy is easily possible for those who are already in the market sector, and not to sectors which require public support such as education, welfare, health and housing. These sectors must serve substantially the groups that will not benefit immediately from the market economy and which need insulation from its fluctuations and changes.

Right to Education a Public Responsibility : Making Education Affordable

A matter requiring serious consideration is the recent Supreme Court judgment which disposes that education is critical to the "right to life". It is a recognised fact that education facilitates, for instance, greater ability to participate in and contribute to the country's economy, or in gaining access to and utilising such services as health and housing, or, in developing an awareness of one's rights. Hence, it is very essential that educational access is not made contingent on class and privilege, through the mechanisms of market economy and privatisation, a phase the country is going through at present.

Among developing countries, India has the privilege of possessing a professional and trained human resource, in which it is not only self-sufficient but is even exporting it, earning valuable foreign exchange, notwithstanding the brain drain, the obverse side of the same phenomenon. Hence, it is essential that our people's representatives play a vital role in productively deploying this asset we have achieved within only four decades after Independence. Despite the lacunae and criticisms of education, which are considerable, we may be justifiably proud of this achievement which should not be frittered away by policies inimical to education.

We cannot give up the fact that education is a social responsibility. It cannot pay for itself if wide access is to be assured. At the same time, it is an open question as to the level to which it needs to be subsidised in order to be able to assure the people a minimum qualification

and training to practice a livelihood. The right to livelihood is also an important right and can be operationalised only if education prepares the person to enter the economy and to earn according to his/her capacity. Education must remain a public responsibility if such a basic right, as the right to livelihood, had to be assured beyond two square meals a day. It would certainly mean education beyond the primary level. It becomes, therefore, an issue of social justice and equity to provide an education which ensures the right to a livelihood.

It also presupposes the provision of an even quality of education in the place of the present uneven quality which is seen in the urban-rural divide and the private school-public school divide. Often, merit is spoken of as the criterion for entrance into higher education but we are well aware that this does not exist in reality, as merit tends to favour the urban private school educated, privileged classes. These realities should be given careful consideration whenever we speak of access to education and tie it to merit. Merit is a product of nurture and not simply nature.

If the Government wishes to place more responsibility on the consumer of education by raising its outdated fee structure, so that those who can afford to pay for their education do so, it must also make education affordable to those who cannot meet such costs, but for whom equal access must be assured. In such a situation, loans may be made available on soft terms through the banks and collected back through the banks or through the tax structure. The university system cannot be burdened with it. However, it must be noted that such a model of education presupposes market conditions of employment opportunities for a substantial number who pass out of these institutions, so that the funds can be recycled. When such conditions do not exist in our society, the loan system may be less meaningful.

The loan also places an equal burden on the poorer sections of society, as their much required salaries for maintaining the family will have to be taxed to pay for their education, and this may prove to be an impediment to their entry in higher education. Hence, the poorer the person, the higher should be the state subsidy for education on a per capita basis, the quantum of the subsidy increasing and the quantum of loan correspondingly decreasing. It should also not place unequal burden on women as the lower the economic status, the greater the likelihood that education will be sacrificed, not to speak of higher demands for dowry where men will have to pay higher for their education.

It is imperative that the social consequences in the context of our Indian society and culture will have to be the perspective within which the concept of affordable

education will have to be placed. I may submit, and it is my personal suggestion, that instead of increasing the fees to a limit where educational access is restricted to the privileged, we should devise a way to link payments to the final degree earned. Thus, for each degree a tax may be imposed on the individual who has earned the degree, allowing for a graded and spaced recoupment over one's life-time for the costs of one's education obtained at public expense. Such a pay back scheme, spread over the years, would place much less pressure on everyone concerned. Through actuarial exercises, it may be calculated how non-payment by persons, who do not find entry into the economy, may be made up by persons who have found such favoured entry in conditions characterised by high unemployment. It is also necessary to tax the employers, because there is an ever increasing tendency among them to demand educational qualifications far in excess of what the job requires. This artificially increases the demand for entry into the higher educational system. Schemes like these will recoup the costs of the education sector and make it the direct beneficiary at all the levels, from elementary to higher education. The tax, so collected, should go directly into education and not be confused with the professional tax.

Responsibility of the University System to the Public

As the privileged group of people who have had access to higher education, which is enjoyed by less than 6 percent of the relevant age group, we carry the responsibility to respond to those who will never see our doors. Hence, universities should undertake the dissemination of information of relevance to the underprivileged groups. It can be made possible through our extension activities. I see extension as field action projects, we may undertake, to better the life of those whose survival remains at very marginal levels. Extension activities are already undertaken by agricultural universities, by institutions of social work education, and in a few home science programmes. They need to be undertaken more systematically by institutions of science and/or technology which are presently more concerned with the industry than the common man. They also need to be undertaken by the other departments of the universities and the colleges through various activities for social development. This dissemination can be by way of demonstration projects, and also by way of training of such groups as small/marginal farmers, labourers, women, grassroots workers, lower level government functionaries engaged in rural development, and a host of such others.

We cannot expect to earn our bread unless our universities are centres of excellence, not only academic excellence in the traditional sense, but where knowledge

is shared outside the university walls, and where this new knowledge, that is generated through such interaction, is fed back into the courses and research in the universities. Relevance in education does not come by sitting in our libraries and classrooms alone. It comes through such live interaction in the field, face to face with our social realities, and confronted by the challenges they unfold to test the parameters of academic knowledge. It will point up the gaps and where there is a need for the generation of new knowledge. Hence, in today's university, extension must become an accepted component along with the other two activities of teaching and research.

Conclusion

I would like to end with an oft repeated but, a necessary statement that education is a social investment and not an expenditure. The NPE states that "....education will be treated as a crucial area of investment for national development and survival."⁸ It is a social investment, not merely because of the type of human resource it will generate for the future of the society we wish to secure, but also because education must have an on-going and an immediate relevance to societal needs. The burden

rests with our Central and State Governments, and their universities, to make the system effective. Only then will the NPE become a reality for the users of the system, as also those who should get the benefit resulting from the inputs in the system. A time has come when we, who work in the university system, must search ourselves for what we can give to the system and the society at large, and not what we can wrench from either or both.

References

1. Department of Education, Ministry of Human Resource Development, **National Policy on Education - 1986** (with Modifications Undertaken in 1992), New Delhi, 1992, p.4(1.14)
2. *Ibid.*, p.9(4.1)
3. *Ibid.*, P.10(4.2)
4. *Ibid.*, P.8(3.10)
5. Report of the UGC Committee, **Towards New Educational Management**, New Delhi : University Grants Commission, 1990, P.iii
6. **Op cit.** National Policy on Education, 1986.
7. *Ibid.*, P.9(3.13)
8. *Ibid.*, P. 49(11.4)

Excerpts from the INAUGURAL ADDRESS

by

Dr. Bhishma Narain Singh, Governor of Tamil Nadu

The educational system as it operated under the colonial rule was designed primarily to produce a steady stream of literates for subordinate responsibilities. The educational agenda, therefore, excluded from its purview possibilities for building up of individuals with a full-grown personality who would be productive citizens of a free and flourishing nation. Macaulay propounded the aims of British education in India thus : "Through Western education the Indians....will be Indian in blood and colour, but English in tastes, in morals, and in intellect". This elitist approach inhibited, by and large the growth and spread of academic institutions and made education beyond the reach of common man in the country.

With the attainment of freedom, Indian entered a new era of development and change and education was

accorded a very high priority by the Government. The Constitution of India itself provides for free and compulsory education till the age of 14 as one of the Directive Principles of State Policy. Recently a special drive has been given to attainment of total literacy and as a result of the National Literacy Mission and the initiative of the central and state governments and the administration of union territories, we have a number of districts being covered by a Total Literacy Campaign. I am happy to say that Pondicherry has achieved total literacy.

The emphasis on higher education has been no less pronounced. There has been tremendous expansion in facilities. The shortage of employment opportunities and the social prestige attached with the acquisition of a degree were some of the important factors that have led to an upsurge in the demand for higher education.

Today with more than 180 universities and 6500 colleges in the country, the enrolment has touched a figure of 50 lakh student. We have had a phenomenal expansion, but all bodies, whether it be the Radhakrishnan Commission of 1948-49, the Mudaliar Commission in 1952, the Kothari Commission in 1964 or the UGC Review Committee in 1977, have uniformly referred to the falling standards alongside the expansion in higher education. The National Policy of Education, 1986 visualized that higher education should become dynamic as never before. The reasons for the weaknesses in higher education identified by the various bodies are varied and would be within the knowledge of the delegates here.

There has been a tremendous advancement in science and technology in the world. For the utilisation of the knowledge of science and technology, higher education has become very crucial. We cannot be oblivious to the developments in the world. We have to respond to the changes and challenges of development. While the institutions of higher learning have been devoting attention to the above aspects and introduction of distance and open education, teaching methodology, modifications in evaluation procedure, examination reforms and faculty development, etc., the emphasis on value education has somehow receded into the background despite the fact that we had some of the most reputed centres of learning which acquired world fame like Nalanda, Taxila and in more recent times, Shanti Niketan.

I just now referred to the National Policy on Education, 1986. It has expressed concern over the erosion of essential values and the increasing cynicism in society bringing to focus the need for re-adjustments in the curriculum in order to make education a forceful tool for the cultivation of social and moral values. Many reasons are adduced for the decline – lack of intimate contact between the teacher and the taught, lack of commitment or interest and the students' unrest in quite a number of educational institutions. I hardly need to refer to the importance of constant contact and continuous dialogue between the teacher and the taught for creating a more cordial academic atmosphere in the institution. Unfortunately, with the growth in number of students which could not be matched by a corresponding increase in educational infrastructure, the teacher-student relationship is becoming less intimate. This is a harmful situation which is causing concern to everyone. Corrective measures have become imperative and essential.

We are all concerned with the building up of a new world. Sri Aurobindo has said that this new world will not be merely of a different pattern but of an entirely different texture. We must prepare the young for "a whole-minded and indefatigable labour for the nation and for the humanity. This ideal can be as yet only a

little seed and the life that embodies this a small nucleus. But it is our fixed hope that the seed will grow into a tree and the nucleus will be heart of an ever extending form. It is with the confident trust in the spirit that inspires us that we take our place amongst the standard bearers of the new humanity that is struggling to be born amid the chaos of a world in disillusion and of the future India". Where will strength or wealth which we need come from? We tend to think that wealth is money. This is a fallacy. Wealth is people, the human resources, and above all the younger generation of the country. They have to achieve a great deal with the available resources. Our education should be value based. Since the objective of education has to be, primarily, the development of the personality of the individual so that he or she may play a meaningful and effective role in the development of the society and the country, it has to be value oriented. Value orientation has a wider connotation and includes values of physical education, vital education, mental education, aesthetic education, moral and ethical education, etc. Only value-based education can endow a student with a receptive and sensitive soul and develop the qualities of heart and elevate him morally and spiritually. This calls for readjustments in the curriculum in order to make education forceful tool for the cultivation of social and moral values.

Qualitative improvement and optimal effective utilization of the existing resources are the needs of the present and the future. Effectiveness of any organization including a university or a college depends upon its ability to accomplish three essential aims, namely to achieve its goals, maintain itself internally and adapt to its environment. It is said that higher educational institutions suffer from paucity of resources. In some extent it is true when considering their needs, but the fact remains that enormous resources were provided in the sector of education year after year. It is also a fact that their output has not been commensurate with the investment. A developing nation with limited resources cannot ignore other sectors of economy. We have to evolve a mechanism for a social audit of higher education. An institution cannot be judged by the number of graduates, postgraduates or students with doctorates produced by it. Social awareness about the return of inputs of education would be a way to evaluate our effort in creating social awareness of linkages between society, environment, development and education. It is specially important as it seeks to add a new dimension to the higher education in our country. Pandit Jawaharlal Nehru once said "If all is well with the Universities all would be well with the nation". It shows the abundant faith that Panditji placed on the higher education system in India. The role of Universities as centres of teaching and research has been getting more pervasive and more

critical in myriad aspects of our national life. University education is of vital importance to the nation. It can set the intellectual tone, help in raising the moral fibre of the nation and in the promotion of scientific temper, democratic and ethical values amongst the people. In all fitness of things, the need for creating the essential basic conditions for the proper development of higher education by rejuvenating the existing systems cannot be ignored so as to make education 'a science of regeneration'.

The social fabric of the nation which has been preserved from the time immemorial is now facing a challenge due to certain forces operating on communal lines in some parts of the country and disturbing the meaningful existence of the national life. This has cast

a greater responsibility on the teaching community to be vigilant against these forces and educate the student community to combat these forces to preserve the unity and integrity of the country.

I have spelt out a few thoughts on the higher education. I am sure this annual meet will discuss the agenda threadbare and come out with practical solutions. The agenda, I find is fairly wide and exhaustive. The Vice-Chancellors and eminent educationists who have gathered here should come out with some valuable suggestions on improving the system of higher education. I hope that this will be a historic session in the city of Pondicherry. With these words, I have great pleasure in inaugurating the 67th annual meeting of the Association of Indian Universities and in wishing it every success.

Excerpts from the WELCOME ADDRESS

by

**Dr. A. Gnanam, Vice-Chancellor,
Pondicherry University**

We are congregating here at a crucial point of time when the system of higher education has come under close and critical scrutiny of the society. On the one hand, the system looks financially and perniciously anaemic, on the other, the system is assailed for its failure to yield returns in terms of relevance, quality and equity commensurate with the scarce resources invested. The increasing concern expressed by the society for accountability in higher education stems precisely from this widespread belief. Appropriately enough, the three day conference of the Vice-Chancellors will discuss and debate these two major ailments afflicting the contemporary University structure.

The basic premise of our deliberation seems to be the uncritical acceptance of the drift of the system towards irrelevance. It is true that the system, despite its gigantic structure, has isolated from the cultural mores of the community and hence has proved itself to be inadequate to meet our national needs and aspirations. The system is divorced from our social objectives and values of manual work, cooperation, training in skills and building up of character. Consequently, instead of producing efficient and committed specialists and national workers, we have produced unemployable resulting in colossal waste of precious manpower. However, I for one believe that we are being stunted by the constraints from growing to the relevant realms and forced to stay

at the foundation level itself because of several constraints.

We can look for several solutions to end this dangerous drift. Location specific and need based approach to our educational efforts and growing interaction with the problems and goals of the community can be a remedy to the present impasse. This would call for integration of extension programmes in our usual programmes of teaching and research. In other words, extension, besides teaching and research, should be recognised as an explicit function of the universities in the future. I hope that the case studies to be presented in this conference would highlight this essential facet of our functioning and suggest a suitable mechanism for the smooth diffusion of functions.

Redesigning the course content of higher education in relation to the future socio-economic and scientific development of the nation, tilt towards application orientation in our course structure, providing freedom to the students to choose, in addition to his main subjects, all those subjects which in his opinion are essential to his future ambition and goals, overhaul of the examination system and building bridges between universities and other organs of industry, commerce and government can impart a great deal of relevance to the teaching aspects of our system.

Likewise our research system should be revamped so as to make it more result oriented and problem solving. We should ensure a close rapport between government policy making and our research efforts so that our research results contribute to the goals of banishing poverty, eliminating unemployment, attaining self-reliance and equity and promoting growth.

But our valiant efforts at achieving relevance are constrained by financial resources, lack of which has considerably hindered even the normal functioning of our universities in the recent past. The present financial crisis haunting the universities is the combined consequence of the escalation in the cost of education and the inability of the institutions and the government to meet this growing cost of education. The enormous increase in the salary element, administrative cost, technology expenditure and the general inflationary trend in the country have been at the back of this escalation. But the universities have only inelastic sources of finance whose base has not widened thereby saddling the universities with burgeoning deficit budgets. The general economic crisis in the country has only added fuel to the fire. The result of this economic misery has inevitably resulted in

the standard reactions such as freezing of new recruitment of faculty, reducing the academic inputs, curtailing the existing services, discontinuing some of the innovative programmes and delaying capital expenditures, thus preventing us from growing into the vistas of quality education with direct bearing on the social needs. These solutions can ease immediate strains to some extent, but are very costly in emotional intensity, stress and management credibility.

The effective and productive use of the existing resources, inter alia, can yield substantial savings and this may call for the implementation of zero base budgeting in our system. These and other measures can succeed only when we are successful in creating in the community an awareness of the constraints and pressures being faced by the universities. They may require more of human effort and ingenuity, we need to have more of thinking together and more of purposeful thinking and to create an atmosphere of free and frank debate and dialogue. I earnestly hope this prestigious three-day conference would be a small but a concrete step in this direction.

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Making the System Work

An Aspect of the Policy

Atma Ram*

One significant level of National Education Policy 1986 is to create congenial condition for the operation of the system. Four major things specified for the purpose are : an atmosphere of utmost intellectual rigour, seriousness of purpose, freedom essential for innovation and creativity, and discipline into the system. The Policy, therefore, clearly asserts : "The first task is to make it work. All teachers should teach and all students study." The strategies outlined include better students and teachers services with greater accountability, more facilities to institutions and a dependable mechanism for their appraisal.

Many of these elements have been stressed from time immemorial. For effective functioning of the system several things are required at the grassroots level. First is the realisation that education is basic to the development and progress of an individual as of a society or a nation. As John Fitzgerald points out : "Our progress as a nation can be no swifter than our progress in education." A meaningful education leads to an all-round progress and serves as a panacea to all social and economic evils. For example, the population growth is minimum in regions with high literacy percentage. Indeed, true development is the development and refinement of human mind. Education sensitises and organises one's sensibilities. All this calls for healthy attitudinal changes, greater consideration for inputs in education.

First, we need peace on the campuses, then maximum and longer teaching days in a year, and finally imparting of quality education, and education for life. Since education concerns a vast area, practically the entire population of the country, innovations and reforms need time to take roots. So drastic changes generate cynicism and the hope of immediate results disappoints many. For instance, reforms initiated at any level, more so in elementary education, will have their impact felt after five or ten years. But many wish to effect a change overnight, as if by a magic wand. Of course, stress has to be on tackling some issues now and here. Whereas measures for family planning need strengthening, we have to arrange for the purposeful education of those who are born. The problem of numbers is there. The issue is not to lament over it but to arrange good education for them, to concentrate exclusively on student services and their needs.

Instead of adopting mutual-blame approach, we should follow 'let me see what I can do' method in regard to different issues. If somebody has not done his duty, let us do it so as to goad him on not to neglect his work in future. Public relationing and help from others, composite, cooperative endeavours in this direction can do wonders. Mere "circulars" cannot do much. All meetings require preparation, decision taking and follow up.

All stages are significant, and means justify the end where 'ripeness is all.'

Education pattern has many small clustres inter-linked together. At times different functionaries seem to consume much time and money and make for confusion and overall weak links. The best way out is internal cohesive measures, a strong inherent mechanism connecting activities of various sectors and not the imposition of external "positions" to keep them intact. Also, direct recruitments of educators and educational administrators at various stages, as suggested in Kothari Commission Report, can infuse fresh look and strength in the system.

A Viable Synthesis

In any workable pattern, a viable synthesis, at higher stages, between 'technocrats' and 'generalists' is a *sine qua non*. It is this aspect which makes or mars the entire fabric. It naturally requires enlightened educationists and dynamic bureaucracy. And, uncertainty about continuance of centrally sponsored schemes sometimes creates problems. Thus several urgent and important schemes tend to be ignored or brushed aside. Schemes like vocationalisation of education, operation blackboard were victims of this uncertainty. Many raise their eyebrows and ask : "What about the post-plan period?" Some innovative projects (for example, College Development Councils, Academic Staff Councils, Restructuring of Courses) have not many "takers" for them, despite numerous incentives offered. This indicates any of three things : there is much communication gap; schemes are not evolved from below, the grassroots; these woefully lack social relevance and are thus good for nothing. This indeed needs a thorough, continuous, external and internal scrutiny and objective review of various innovative schemes and less dependence on so-called reports or mere data and figures or whims of individuals.

At some stages, especially in backward, far flung regions, administrators have little guidance available. Besides their compulsory periodic orientation, there is a need of updated and perceptive reading materials and handbooks for their use and help. The existing system should be streamlined and irritants removed. Financial crunch everywhere is a hard fact of life, to be accepted once for all. The tendency to run administration through expensive measures – telephones, taxis and telegrams – should be curbed. A stitch in time saves nine. We should also explore areas where resources are available, and ensure and encourage optimum use of existing infrastructure and human material. Self-financing projects and programmes involving public support mechanism and off-beat ventures deserve special attention.

In reality, management in education should concentrate on and adhere to Hellenism and Hebraism and provide the requisite inputs and initiatives leading to effective teaching-reading processes.

* Director of Education,
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Management of Educational Institutions

A Survey of Problems and Remedies

P.N. Mishra*

Shailendra Pandit**

An excellent education system is imperative for a society which wants to grow and develop. Although the returns of education cannot be measured directly, they are reflected in the performance of almost all sectors of the society, as education provides input for their functioning by way of knowledge, skilled and trained individuals. A society that wants to remove poverty and bring prosperity should pay utmost attention to its education. If education is improved the whole society will automatically improve.

To identify the problems that besiege Indian education, a pilot study was conducted in Indore, involving leading educationists and educational administrators of the city. Following problem areas were identified :

- Resources
- Discipline among students, teachers and staff
- Syllabi and teaching methods
- Community response and support
- Functional autonomy
- Morale of teachers
- Parents' commitment
- Management of examination and evaluation,

Remedies to these problems that came out of deliberations during our study are presented below.

Resources

Most of our educational institutions face an acute shortage of resources in the form of finance, land, building, teachers, etc. All other kinds of resources assume secondary importance before funds. An educational institution, in order to remain honest to its purpose and independence, must be financially sound. Due to inadequate and irregular payment of funds, educational institutions compromise their independence. As a solution, the participants in the pilot study suggested that funds should be provided to educational institutions as a statutory right and if the government fails to do so the institution should have the right to approach a Court of justice. This suggestion may sound a little too

idealistic and simple. It may not be feasible because the government itself may not have enough funds. Another solution forwarded during the study was that the institutions should generate their own financial resources. And this they are capable of. Educational institutions generally have land, building, manpower, etc. which are, most of the times, used sub-optimally. There is not a single school or college building that is used 24 hours a day. Spare time of the institution premises may be rented out. Gone are the days when educational institutions were treated like sacred places and had the status of an Ashram. If the free time of a college building is used for some lawful financial gains it will give the institution autonomy and liquidity to diversify into other areas. Similarly, if some land is available, it may be used for agriculture or other such legitimate community purposes. There is no dearth of talent among students and faculty so far as cultural activities are concerned. Many of them are accomplished performers in the fields of music, dance, theatre, etc. No thought has been given so far to organize such activities for financial gains. Some idealists may say that the purpose of an educational institution is not to earn money but for survival and independence of the institution, money is needed.

There is no point in everybody paying the same fee. Students with an affluent background should pay more than those who are not so privileged. There should be a differential fee structure. High ups in the society must be required to pay higher fee, compared to poor and middle class people, for the same education.

To save money, efforts should be made to avoid duplication. It is observed that several departments of an institution purchase the same equipment while everywhere it is underutilized. Instead, the resources should be pooled. Neighbouring institutions can share their resources to save money. They can form an educational complex.

Indiscipline

When we talk of indiscipline in educational institutions, the focus is always the poor students, whereas indiscipline is not so uncommon among teachers and other staff. Teachers are supposed to be a self-motivated and committed lot. The only way to motivate them is to make teaching more purposeful and productive. The head of the institution can discipline a teacher

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by way of example, persuasion and compulsion. Punishment should be resorted to only if these three fail.

To discipline students Parent-Teacher Association and extra-curricular activities can be effectively used. Students have a lot of energy to be dissipated. If their energies are not channelised into constructive and creative work cases of indiscipline are bound to occur. Therefore, students should be encouraged to participate in maximum possible activities of the institution. Governance of the day-to-day affairs through students committees has produced good results in many places. It also prepares them to shoulder bigger responsibilities in future.

Reward and punishment are supposed to be two important tools to enforce discipline. Reward is a positive method while punishment negative. Punishment should be inflicted only when all methods fail, the purpose being corrective rather than punitive. As far as possible, punishing should be creative. The participants of the pilot study shared many such examples. There was a student who always forgot to bring his pen to the class. When repeated reminders failed to bring about any improvement, the teacher finally gave him a tiny pencil to write in the class with. It was an ordeal to use it as it was too small even to hold properly. The boy never forgot his pen again.

When it becomes necessary to punish a student the Hot Stove Rule should be followed. Whosoever touches a burning stove burns his fingers as many times as he tries. Punishment is immediate, consistent and reminding.

Reward and punishment are very delicate tools. They should be used carefully and judiciously. Reward can both be monetary and by way of recognition. Giving a student a letter of appreciation, praising him publicly, publishing his photograph in the in-house magazine, etc. are all examples of reward by recognition. Monetary rewards should not be very valuable. Their reward content should not get dominated by the money content. Books, reading and writing material, etc. may constitute very good rewards. The frequency and the number of rewards are also delicate decisions. Too infrequent and too little a reward loses its impact, but so does a too frequent and too great a reward.

Syllabus and Pedagogy

All the educationists participating in our study were unanimous in declaring problems related to syllabi and teaching methods as among the most crucial ones faced by educational institutions today.

A syllabus should ideally be flexible with national, regional and local content. It should have an optimum

mix of knowledge and skill and should integrate the worlds of work and study. Community's problems and interests should be given due weightage in the syllabus. An ideal syllabus should aim to impart to the students culture, knowledge and skill. Working people and professionals should also be invited to teach. Services of old and retired teachers, officers of development agencies and professionals like advocates, doctors, engineers, etc. should also be obtained in order to give a practical orientation to education. An educational institution can discover a lot of "illiterate" talent in its surroundings. These are people who have not received any formal education but have excelled in some art or craft. Such talented people should also be involved in imparting practical instructions in the field they have mastered. This will not only enrich the curriculum but also increase the involvement of the community in the affairs of the institution, a problem area that is discussed in following section.

Community Involvement

It is generally felt that the community's response and support to an educational institution is poor or indifferent. Such an attitude arises due to the institution's own fault. By and large, the institution does not invite a large section of community to its social functions. On the other hand, it also does not participate collectively in community's activities and festivals, etc. Both remain alien to each other. In order to seek community's support the institution must strive to increase the level of interaction with the former. The institutions do not extend to the community the benefits of their resources and, in exchange, are deprived of those of the community. Institutions must share their talent, resources and wisdom with the community as long as it does not hamper their primary cause. For instance, the building, if free, can be allowed to be used for collective activities. Local people may be invited to give suggestions and comments on the working of the institution. Such an arrangement can be formalized by making an advisory committee comprising representatives of community.

The community should be given to understand that the institution exists for them and that it takes every care to serve them well. The institution can also give formal honour to local people on their achievements. A bright student getting selected in an All-India competition, a good doctor, engineer and social worker should be felicitated.

These are some of the ways of bringing community and institution together and make their existence mutually beneficial.

Autonomy and Decentralization

In the survey conducted by us, many educational administrators expressed their concern over the lack of

functional autonomy. The more the control, the less viable and efficient the organization. Only an organization with appropriate functional autonomy can respond to changing environment. However, functional autonomy is something that an institution commands; it is not automatically conferred upon it. Even if there is a statutory provision, functional autonomy has to be asserted and earned. Ideally, a committee of students, teachers and representatives of local developmental agencies and community members should conduct the affairs of the educational institution. Against this, an argument can be advanced that by and large such people do not have enough relevant experience. But they will never have it if they do not start taking responsibilities. Only general guidelines may be provided by central, state and local governments and there should not be any interference of district and other administrative agencies. The institution should earn popular support to achieve the above ends.

Decentralization has been deemed as a panacea for all administrative ailments. But decentralization does not mean breaking away from the main body of the system. It only means that units are self-governing and functionally independent, yet contributing to the attainment of the objectives of the system. Decentralization reduces the burden of the main body and contributes towards its effectiveness. The institution should strive to be functionally autonomous and financially independent.

Morale of Teachers

Low morale of teachers has also been identified during our study as a major problem and cause for concern. Teaching as a profession gets low priority among talented youth. Many in this profession have taken it up as a last resort, purely by compulsion, and not by choice. Exceptions are found everywhere. There are teachers possessing a high degree of dedication, commitment and motivation but the majority lacks these qualities and is indifferent to the cause of academics. Several factors such as relatively unattractive service conditions, lack of growth opportunities and proper training, etc. may be held responsible for this. The respondents of our study were largely of the opinion that teachers do not get due respect and recognition from students and community. Respect is to be earned; it cannot be demanded. One who works sincerely gets more in terms of status, respect and recognition. One of the respondents very candidly challenged the group to point out a single case where a teacher was not respected despite being sincere and honest. Teachers should have inner and self motivation. However, this is

not a pretext for denying them better service conditions and opportunities for growth and professional advancement. The government and society should take this responsibility upon themselves. At the same time, teachers should also meaningfully participate in community's activities which will earn them a say and recognition.

Parents' Commitment

The commitment of students and parents to the cause of education in general and to the institution in particular is low. Several factors have been identified as being responsible for this, such as, lack of purpose and meaning in education, school time unsuitable to the needs of the learner, lack of participation by students and parent in institution's activities, etc. The commitment of parents to the institution would increase only if they see and feel positive changes in their wards. If such changes as good manners and discipline are not coming forth parents will have next to nil commitment to the institution. Institutions are for the learners and not the other way round. Therefore, timings should be adjusted as per the needs of the learner. There should be regular parent-teacher meets to get feedback for better functioning.

Evaluation and Examination

Conduct and administration of examination has now become a very difficult task in most of the institutions. Teachers and educational administrators are resorting to police support to conduct examinations. Mass copying and violence during examinations are phenomena that have become more than occasional. The UP government had to come out with a legislation to declare copying in examination a cognizable offence. March 1992 exams were conducted under police patronage and a large number of examinees were put behind bars. One can imagine the alarming heights the situation has attained.

Examination should be a continuous process. There should not be just one exam to test the calibre of the student at the end of the academic session. There should be several exams, of multiple aspects, placed evenly throughout the academic session. Such an examination pattern would make students serious about studies as well as evaluate their personality as a whole. But if education is not purposeful, no modifications and improvements in the examination system alone will bring desired changes. Hence, making education purposeful and examination reforms should go hand in hand.

University and Leadership

Biplab K. Mazumdar*

To educate for leadership is still a primary duty of universities, and to get such an education should be one of the chief motives which bring students to them. Few in the nineteenth century's universities had thought as deeply as Newman about what they were doing, and none possessed his eloquence for declaiming it, but most would have argued, if he had put it to them across the table, that among their chief tasks was the shaping of gentlemen who would acquit themselves well in the world of affairs. It was essentially an educational aim. The subjects taught were useful only in directly in later careers; their purpose was to sharpen the reason in the course of a general survey of the perennial interests of man's mind – his history, literature and thought. The purpose of ancient university was education, that of the modern, research. Both have by now influenced each other, so that research is almost vital to an academic career. Education in Indian universities today makes people easy to lead, but difficult to drive; easy to govern, but impossible to enslave. In the newspapers we often read this pitiful sentence : "The people must be taught to read," and we say to ourselves, What shall they read? It is education and undesirable literature, these are our enemies. And the modern universities are uneasily alive to educational duties.

Research at this time will look after itself; it is conveniently settled in universities and is far more likely to expand than be expelled. The idea that universities should educate men and women whose abilities suggest they may hold high place in life is less secure. Education for leadership is an unpopular notion in a society where equalitarian views are strong. Happily enough the scientists themselves, who are necessarily most bound to research, are coming round in their pragmatical way, to the other point of view. It is probably fair to say that except where their professional qualifications make it absolutely essential scientists do not occupy public positions in contemporary life in proportion to their talents. In a technological civilization this can lead to very wasteful and damaging situations. Disraeli cynically expressed the dilemma when he said : "I must follow the people. Am I not their leaders ?" He might have added : "I must lead the people. Am I not their servant?" The true leader must submerge himself in the fountain of the people.

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In other words, scientific students, admirably trained in techniques for extending the bounds of knowledge, have not been sufficiently educated in the arts which enable them to deal with men. In spite of the difficulties, which are caused by traditional arrangements and also by the sheer extent of the knowledge in his own field which he has to cover, the young scientist would be better for being made to study philosophy, history and literature. All tell him more of men than his own subject, admirable thought that may be as a purely intellectual training. A leader of men must be schooled in what is tucked away in most men's minds, the cultural inheritance; it is far too deeply there to be ignored. Education for leadership as it happened to be administered in nineteenth century was far from being wholly a matter of studies pursued. It lay much in community life, in the friendly intercourse of teachers and taught, and the talk which is continually stimulated when able young people, pursuing wide different sorts of knowledge, are set to live under one collegiate roof. Residence has only recently become an accepted policy of modern universities and it is unfortunate that their conversion comes at a time when building is difficult and expensive. It is through common living that mental habits of freedom, equitableness, calmness, and moderation can be formed and also the power to understand men and to lead them. A leadership of universities is best when people barely know it exists.

There is little point in protesting further at the vocational character of many university courses today. Medical doctors, were anciently produced by universities, and engineers, chemists, architects and others are no more than a modern extension of responsibilities long ago accepted. At the same time it must be supposed that through a wisely rigorous selection the universities receive the ablest intellects. An engineer trained in a university must be assumed to be marked out as a possible leader in his profession, and for that leadership he needs to be educated. Part of that education should be social. It implies residence and a greater willingness among university teachers, in spite of straitened means, to make friends of their pupils as the old dons did. The rest can be achieved, not by avoiding vocationalism, but by liberalizing it. Leaders need to know more than their subjects; they need to have a steady grasp of what is in the minds of men, the thoughts that have always excited, the traditions that remain. Humane studies are a well-trying way into this kind of knowledge and for them every scientific and technological course should find a place.

The Relevance of Ambedkar

A.K. Ghosh*

That Babasaheb Ambedkar was a constitutional genius is not refutable and not refutable is his contribution in instilling a new life among the untouchable section of the society. One wishes that, as a sequel to the nationwide celebration of his year-long centenary, Dr. Ambedkar's social and political ideas and values were known better among every section of the society. These ideas of Dr. Ambedkar have a relevance to contemporary conditions, and if widely known, may be helpful in preventing the ugly social condition, particularly at a time when secularism, which forms the basic structure of our Constitution, is in jeopardy.

Dr. Ambedkar was always a fighter. He not only saw but experienced injustice done to the 'untouchables' by the privileged class of the society. It was not only a fight against a social order where some people had been condemned to serfdom but also against economic exploitation of the have-nots by the haves. Being a relentless crusader for new social ideas, he became a kind of iconoclast. He brought in the concept of dignity of individuals and had it enshrined in the Constitution. Thus he became a modern Manu, a champion of cultural freedom and individual dignity.

Dr. Ambedkar's social and political ideas revolve around the social basis of democracy and they have a ring of sincerity about them. This is because he wrote from personal experience and conviction.

Born in a poor and socially inferior family, he rose to the highest position then open to an Indian, namely, a member of the Viceroy's Executive Council and later became the first Law Minister of independent India. He rose to these high positions by sheer merit. Soon after his return after higher studies in United States (which he was able to have by the kind courtesy of the ruler of Baroda), he was appointed military secretary to the ruler of Baroda but even in this high office he was subjected of humiliation which is perhaps unparalleled in history. Here is what his biographer writes: "Normally, a young man in such a position would be regarded to be in an enviable position, with excellent prospects for

a life of prosperity, high social status and respect, and attendant satisfactions. However, the young doctor was not treated as an officer or a scholar but as a mere untouchable. His assistant, much inferior to him in educational and economic status, treated him like dirt. As an untouchable, he was not provided with drinking water and his assistants would fling the files at him rather than respectfully handing them over. It was hard for him to find accommodation in town. Since no Hindu could let his place to an untouchable, he somehow, found a place in a Parsee Inn. Later, even the Parsees drove him out of the building and the young doctor was literally on the streets. On complaining, the Maharaja sent him to his Diwan, who proved to be of no help."

The first source of his social and political ideas were his own personal experiences of living in a caste-ridden society; the second source was his wide reading and reflection. That he was an intellectual of the highest calibre can be seen from the large number of thought-provoking books which he wrote such as "Thoughts on Pakistan" (1941), "Ranade, Gandhi and Jinnah" (1943), "Mr Gandhi and the Emancipation of the Untouchables" (1943) and "Thoughts on Linguistic States" (1955). He was also Professor of Jurisprudence and Constitutional Law for several years.

His social and political ideas primarily refer to democracy and the unity of the nation.

In the decade before India got independence, there was a famous debate in Bombay political circles whether social reform should come first or political reform leading to self-government and democracy. In the course of an address on 101st birthday celebration of Mahadev Govind Ranade in 1943, Ambedkar commended Ranade's preference for social reform over political. The argument which Ambedkar used goes to the heart of political thinking on democracy: it is true that we want political freedom and through political freedom, democracy. It is true also that democracy provides fundamental rights which are legally available to every individual, but the question is how to make them effective?

The prevalent view is that once rights are enacted in a law, they are secure. This is an unwarranted assumption.

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tion. As experience proves, rights are protected not by law but by the social and moral conscience of society. If social conscience is such that it is prepared to recognise the rights which law chooses to enact, the rights will be safe and secure. But if fundamental rights are opposed by the community, no law, no parliament, no judiciary can guarantee them in the real sense of the word. What is the use of fundamental rights to the Negroes in America, to the Jews in Germany and to the untouchables in India? Burke said, there is no method found for punishing the multitude. Law can punish a single solitary recalcitrant criminal. It can never operate against a whole body of people who are determined to defy it.

Does our experience since 1947 not fully substantiate Ambedkar's thesis? The Constitution of the land and the laws clearly and unmistakably declare that untouchability is illegal: yet untouchability is still practised and the rights of Harijans are still not enjoyed by them to the full. That is because social opinion is still inadequately educated on the subject. Ambedkar rightly says that society can practise tyranny and oppression against an individual in a far greater degree than the government can. The means and scope that are open to society for oppression are more extensive than those that are open to government; also they are far more effective. What punishment in the penal code is comparable in its magnitude and its severity to ex-communication?

Ambedkar rightly said that a democratic form of government presupposes a democratic form of society. It might not be necessary for a democratic society to be marked by unity, by community of purpose, by loyalty to public ends and by mutuality of sympathy. But it does unmistakably involve two things: The first is an attitude of mind, an attitude of respect and equality towards their fellows. The second is a social organisation free from rigid social barriers. Democracy is incompatible and inconsistent with isolation and exclusiveness, resulting in the distinction between the privileged and the unprivileged.

Let us emphasise the point made by Ambedkar that social exclusiveness is inconsistent with democracy, for this is connected directly with the nature of representation which is basic to modern representative democracy.

The representative system is based, Dr. Ambedkar argued, on two assumptions: (1) it assumes that the majority of voters in a constituency represent the will of the constituency as a whole, and (ii) that the representative who is elected by the voters will represent the wishes and interests of the voters and that there is not

the danger of the representative allowing the interest of his class to dominate and overriding the interests and wishes of the voters who elect him.

As a matter of fact the territorial constituency in India can hardly reflect the general will of all sections of the people. It can but give "a place to reflection of the general will and even that capacity for pale reflection must depend upon how numerous and varied are the interests which are consciously shared by the different sections of the constituency and how full, and free is the interplay between them. It is obvious that where, as in India, there are no interests which are shared, where there is no full and free interplay and where there are no common cycles of participation for the different sections, one section large or small cannot represent the will of the other".

Dr. Ambedkar was a nationalist to the core. A firm believer in the unity of the country, he advocated and achieved a strong centre without unduly weakening the states in a federal set up. The Constitution, of which he was a prime inspirer, does not give the right to the states to secede from the union, notwithstanding the note of federalism.

While enunciating his views on democracy and socialism, Dr. Ambedkar made it clear that he was against consecrating new idols in place of the old ones he had done away with. He explained why he was not in favour of placing an individual on a pedestal, be it Mahatma Gandhi or Jinah. "I insist that if I do not love them it is because I love India more, that in the true faith of a nationalist.... the country is greater than the men". He also advocated an effective opposition which he felt was a *sine qua non* for democracy.

Ambedkar held that an egalitarian society could become a reality only if economic liberty accompanied political liberty. His statement while addressing the Round Table Conference in 1931 is pertinent in his context: "I belong to that class which takes that stand on democracy which seeks to destroy monopoly in every shape and form."

Dr. Ambedkar was acutely conscious of the injustice inflicted on women and he championed their cause with a zeal and enthusiasm comparable to that of Jyotiba Phule and Rammohun Roy. The Hindu Code Bill piloted by him bears testimony to the desire he had for cleansing Hindu society of various ills that had crept in due to historical and sociological reasons. His views on social justice and the liberation of women have found many votaries now.

Water Management in India

"The water management in our country is indeed very poor. There is lot of waste of water in all the uses. The irrigation systems require to be modernised and water distribution improved to ensure equitable supplies through rotational basis. Canal seepage losses must be reduced to the minimum and maximum use of conjunctive ground water should be made", said Dr. C. C. Patel, Ex-Chairman and Managing Director, Sardar Sarovar Narmada Nigam Ltd., Gandhinagar. Dr Patel was delivering the Convocation Address at the thirtyfifth annual convocation of Sardar Patel University. "Good criteria for an efficient irrigation management should be maximum productivity per unit of water, assurance of timely supplies, equity of water distribution, and stability of production through sustained irrigation", he added. Excerpts

This university is most favourably situated in a region which got the opportunity for rapid development. I am referring to the Mahi Kadana Project. A beginning was made with the construction of Wanakbori weir in 1957 which was followed by Kadana and Bajaj Sagar dam to provide perennial supplies for irrigation and drinking water. Today the agricultural production has risen to more than 3 to 4 times in the last 20 years or so and still there is vast scope for further development. The most important area needing attention is the water management. With copious water, sense for economic and efficient use of water has not fully developed amongst the farmers. If we look at the figures of water consumed for different crops, we find that there is scope for economy by atleast 25%, if not more, even if we continue to irrigate through canals. The command area has provided an excellent example of conjunctive use of ground and surface waters, so much so that ground water irrigation today exceeds the canal water irrigation. Both these sources are complementary. The canal water recharges the ground water. It is still available in larger measure for additional irrigation. There is tremendous scope for sprinkler and drip irrigation which can not only economise in use of

water, but also provide a means for increased agricultural production. There is one more area which has not been tapped in any significant manner. This is the area of agro-industries. There is great scope in our country for development of agro-industries in the areas where perennial supply of water is available for irrigation. Mahi-Kadana area is ideally suited for agro-industry development. All infrastructural facilities needed are available within the command area itself, namely electricity, excellent experienced peasantry and long experience of irrigated agriculture. There are ready markets in the Middle East. What is needed is a planned effort to systematically develop agro-industries. The success of this would depend upon the willingness of the farmers to form large cooperatives with the twin objectives of growing certain agricultural crops on a long term basis and produce agricultural fruits/crops, etc. which can sustain a particular agro industry, which again would depend upon the market surveys, both within the country as well as abroad. Cooperative is not a new concept for Kaira district. With Amul, it has demonstrated to the whole country that it can make a success of any cooperative venture. This is the most opportune

time for agro industrial development of the Mahi command area. Government of India has accorded high priority to this sector. With appropriate professional guidance and technical know-how, agro industrial ventures can be successfully set up. There is little doubt about their success, if proper management is provided with systematic planning and market surveys.

The State has undertaken the Sardar Sarovar Project which will provide 7 times more irrigation as compared to Mahi Kadana. If agro industrial concerns are set up in Mahi area, this would provide a model for the all-round development of the areas, especially North Gujarat, Saurashtra and Kachchh, where agro industries best suited to the agro-climatic conditions available in these regions can be set up. Sardar Patel University can play a yeoman role, firstly by preparing project reports and secondly by giving professional guidance to the cooperatives in various disciplines. This would provide all round employment to one and all in Kaira district and people even would have to be imported. The agro industrial products can fetch 10 to 15 times price compared to the raw agricultural produce.

Although more than 20 years have passed after the Kadana dam has become operational, a comprehensive agro-economic and socio-economic impact of this project has not been assessed. With the environmental concerns which have grown very rapidly during the last 5-7 years, a total environmental impact assessment is also over due. Environmentalists claim that major dam projects bring disastrous consequences so far as environment is concerned. And that the damage caused by them exceeds the benefits. It is high time that a total Kadana dam impact assessment be attempted without any delay. Sardar Patel University and the Agro-economic Institute at

Vallabh Vidyanagar can play key roles. I am sure that Sardar Sarovar Narmada Nigam Ltd., if approached, can favourably consider allotting some funds for such a study. Kadana dam project has got all the elements, namely, rehabilitation, perennial irrigation and water supply to some villages and towns in Bhal area. It has also conjunctive use of ground and surface water. Such a study would, however, require many disciplines – agriculture, public health, economics, sociology, anthropology, agronomy, irrigation and dam engineering and others. Sardar Patel University can undertake such a study by devising suitable data formats which can be filled in intelligently with the help of investigators who can visit the sites and carry on enquiries with the people concerned and collect all relevant data and carry out necessary surveys. Such a study can contribute immensely towards the future of water resources development in the country as well as in the other developing nations.

Today, we are using not more than 16% of waters, flowing in the rivers of our country and still, 1/3rd of the country is droughtprone while 1/8 of the country is floodprone. A large majority of the villages do not have facility of potable drinking water. Even many towns suffer from acute scarcity of water which does not meet the hygienic standards. What is the way out? Small dams? These small dams and micro structures such as Bandharas and check dams are most attractive. They can be built within a year or two and their capital costs are low. The ground water structures are also likewise very attractive. Dug wells, dug cum bore wells, tube wells – all have been built in our country in millions. But we have to look to future scope and reliability of supplies. Till 1990, 34.31 m.ha. of irrigation potential has been created

through major and medium irrigation schemes. In the minor sector, small tanks and check dams account for 11.21 m.ha. while ground water accounts for 34.90 m.ha. The ultimate potential which can be realised from major and medium irrigation schemes is 58.48 m.ha. while small tanks can provide 17.38 m.ha. Through ground water, potential of about 39 m.ha. was assessed so far. However, now the hydro-geologists claim increase in the potential to 80.40 m.ha. I must raise a note of caution with regard to the figure of 80.40 m.ha. This is not based on ground water modelling or more precise methodology of ground water assessment. In drought prone areas, such as North Gujarat, Kachchh, Haryana and others, the ground water table has been going down. There is already over exploitation. Thus, a figure 34.90 m.ha. achieved at the end of 1990 includes the fraction of overexploited water, which must be deducted. Minor irrigation potential likewise is also overestimated. The actual irrigation through minor irrigation is more or less constant for the last 10 years. Whatever additional potential is created is offset against reduction in the potential of existing minor irrigation tanks by way of silting and other maintenance and operational problems. Reliability of minor irrigation and well irrigation is very poor. In drought years, when their need is maximum, they fail and even drinking water is not available. The real scope in increasing the irrigation potential is to tap the major dams. There are only a few dam sites remaining in the peninsular rivers. There is scope for such dams on the Narmada river, Maha Nadi, Maha Godavari and Krishna rivers. For the Ganga Brahmaputra and Meghna system there is still much more limited scope. If all the feasible

dams are built, even then more than 65% of the river water would continue to flow waste into the sea. If watershed management is taken up on a countrywide scale, as the environmentalists talk about, more than 55 to 60% of the waters of the country would continue to waste into the sea. A question would arise as to why I am talking of only irrigation, although there are other uses of water. I shall give an explanation. All other consumptive uses such as municipal and industrial water supply as well as water supply for power plant do not account for more than 10 to 12% of the waters being used consumptively in our country. Thus, their consumptive use being small and in any case municipal and drinking water uses will have priority over irrigation, they have not been discussed. I must clarify that I am not an advocate of large dams. When I was Secretary in Ministry of Irrigation, we handled all types of irrigation schemes, including major, medium, minor, ground waters, command area development, irrigation management, flood control, etc. We had to take a balanced view in the larger interests of the country. A two pronged strategy was adopted. Complete all on-going works as well as large dams. Improve the efficiency of water management. The water management in our country is indeed very poor. There is lot of waste of water in all the uses. The irrigation systems require to be modernised and water distribution improved to ensure equitable supplies through rotational basis. Canal seepage losses must be reduced to the minimum and maximum use of conjunctive ground water should be made. Good criteria for an efficient irrigation management should be maximum productivity per unit of water, assurance of timely supplies, equity of water distribution, and stability of production through sus-

tained irrigation. Environmental impact assessment was not attempted in a comprehensive manner in earlier projects, although known adverse environmental impacts were taken care of in the planning, designs and operation of the systems. Presently, before Planning Commission accords clearance, all large water resource projects must have an environmental impact assessment which must be approved by the Ministry of Environment and the ameliorative measures must be built into the project designs and implementation. This will certainly improve the performance of the projects, but it is totally erroneous to assume that all the projects which have been already built have ignored the environmental aspects altogether. In fact, almost all major environmental concerns had been duly considered and the planning, designs and operation of the projects were decided accordingly. By adopting the modern system of environmental impact assessment, greatly significant improvements in the projects benefits are not likely, though strict monitoring would improve the project programme.

I shall now come to Sardar Sarovar Project. The implementation of this project has coincided with the period of renaissance for environment world over. This is certainly a change for the good, but today, codes of conduct by human beings in various walks of life including formulation, implementation and management of the projects do not exist. There is too much of an empty talk of environment. The environmentalists have thrown no light on how best to design and manage large dam projects like Sardar Sarovar, so that sustained benefits are assured over a long period. The environmental preservation and protection organisation have come

up like mushrooms all the over the world with laudable objectives of improving the environment of this planet. They have contributed towards creating awareness, but have failed so far to come out with a code of practice including alternative solutions to the development of the countries, especially the developing countries so as to meet the growing requirements of the mounting populations. Their only motto seems to be to stop all the developmental projects. How can one improve the quality of life by such an approach? In fact, the development sustains the socio-economic activities and provide a better standard of life. Do they want the society to move backwards towards stone age? With the huge population which is growing, even this will not be possible without large scale annihilation of the human population. The environmentalists have naturally made big dams as a target. They want to show to the world that by stopping the works of big dams, they are preventing environmental disasters. They forget that unless viable alternative means are available within the reach of the society to meet the growing requirements of the society either for water or for other purposes, mere stoppage of projects is suicidal. Sardar Sarovar Project has unfortunately been caught up into this controversy. The anti-dam elements in the country have taken full advantage of this situation and are deriving support from international environmental groups. The national anti-dam elements by and large do not have environment as their main objective, but they prefer to put on a green coat as a convenient means to oppose the dams. They have succeeded in suspension of Japanese Yen credit for the turbo generating sets of Sardar Sarovar Project. However, let us hope that this is only a

temporary suspension. They have succeeded in delaying the decision by the World Bank to continue the financial assistance to this project. But they have failed to stop the World Bank aid. World Bank has been giving credit to large numbers of dams, both in the past as well as in the present. Why should Sardar Sarovar project be singled out? The project has been appraised by the World Bank in 1985 and its economic viability was reconfirmed in 1990 by the World Bank experts after considering environmental positives and negatives. World Bank teams visit the project every six months. No major deficiencies in the project implementation have been reported by the World Bank Team. Unfortunately, the World Bank under pressure from the Executive Directors of several developed member countries was compelled to review the project implementation for improvements, if any, in the rehabilitation or the environmental aspects. For this purpose, they appointed a review team headed by Mr. Bradford Morse. The team most unfortunately trespassed their terms of reference and came with a conclusion that rehabilitation cannot be implemented and that the environmental studies have not been completed (according to the standards of developed countries), and hence, the World Bank should step back from the project, whose works should be stopped pending a comprehensive environmental assessment and its consequent impact on the project designs. The team failed to make any suggestions for improvements in implementation which was their main task. None of the members of the team had any experience of planning, designing or implementing projects in developed countries. They had no time to consider and assess the dire consequences, if implementation of such a

project like Sardar Sarovar Project were delayed or stopped altogether. No wonder, Gujarat and three other beneficiary States – Maharashtra, Madhya Pradesh and Rajasthan instantly opposed the recommendations of the Morse team and the Central Government also opposed the recommendations. The only wise course for the World Bank would now be to continue aid to the Sardar Sarovar Project. They can monitor the implementation and suggest improvements therein, but it would be totally inept to walk away from the project which the World Bank had supported for the last 12 years. Even for getting better results of the 280 millions dollars which they have lent to this project, they should continue their association. However, we must all understand that this is not a question of Sardar Sarovar Project alone. There are many projects which are less attractive from techno-economic, socio-economic and environmental angles which comprise large dams. All these would have to be denied World Bank assistance. In our country, Sardar Sarovar Project had the distinction of utilising the credit at the fastest speed. The Government of India earned handsome foreign exchange when it was most needed. If such projects are denied assistance, what are the projects environmentally acceptable to the World Bank which they consider to be credit worthy for meeting the growing requirements of the developing countries, especially in the water resource sector? World Bank cannot shy away from development. No doubt, environment will play a more important role. Another point is that the World Bank should have the same standards applicable to all other projects within the country and abroad and more importantly they must not distinguish between the efficiency at which one project is

being implemented, ignoring similar aspect for other projects. The Board of Executive Directors, in my humble view, should not interfere with the Bank management and the Bank President on problems of day to day implementation, or on a specific project. They should lay down policies and the implementation should be left to the management of the World Bank. If they continue to interfere as they have done for Sardar Sarovar Project, the efficiency and the good name of the World Bank management would get a set back. Let us hope that better counsels will prevail in March next when another Review Team will visit the project and hold discussions with the respective State Governments especially in the light of the assurances given by the respective State Governments and the Centre.

Today, many of the young students are graduating in various disciplines. However, the future so far as gainful employment is concerned is none too good. This is in spite of the fact that the rate of development of the country has been quite good and sustained. Unfortunately there are too many universities in our country and the students coming out have a very long waiting period before they get gainful employment. Some of them are lucky to go abroad, where they not only get employment but learn better skills. Many of the students take to postgraduate courses. One of the reasons being lack of gainful employment on getting graduate degree. In fact, in developed countries like America, Europe, the percentage of students taking university education is very low. This is mainly because they get employment after school leaving. The whole policy of education has to be reviewed in the light of the present and future pattern of development of the country through various economic and social activities. Vocational

training must be given highest priority. A graduate especially in technical disciplines should be able to attend to minor mechanical, electrical and civil problems met in daily life and should not wait for a mechanic. He should be able to attend to minor problems of a car, motorbike, or a cycle. 'Do it yourself' should be the motto. Various applications of computer in almost every discipline are now available. They are going to increase in future. No student should lack in rudimentary computer training. He should be able to lay his hands on computer and gain workable knowledge of application of common softwares. Lastly, young engineering graduates had been hoping to get employment on the Sardar Sarovar works. Unfortunately this has not materialised. The main reason has been over recruitment of engineers in the past. These engineers have been waiting for long for their promotion. The Government has stopped recruitment of civil engineers altogether. I do hope that this will resume which it has to in not too distant a future. I personally believe that a more gainful employment is awaiting the young students not in the project implementation stage but in the stages when project implementation will bring fruits. There will be a chain reaction, not only through irrigation, water supply, flood control or other benefits, but when agro-industries potential will be tapped the economic activities will spurt and the benefits of the project would reach one and all in the State. The Sardar Sarovar Project is not an end in itself but it is a means to improve the quality of life. What is needed is advanced planning and preparation of sound and economically viable project to fully exploit the benefits from Sardar Sarovar Project. Such projects are bound to be financed sooner than later and the benefits must follow.

Seminar on Haryana Colleges

Inaugurating a two-day UGC sponsored seminar on "Colleges in Haryana need reforms" organised recently at the Kurukshetra University, the Chairman of UGC, Prof G. Ram Reddy, stressed the need for granting autonomy to good colleges to improve the standard of higher education. Dr Reddy regretted that though a college was the basic unit of higher education and colleges were started much earlier than the universities in the country, there was hardly a change in the role and character of a college.

Colleges the world over were autonomous and their principals enjoyed a status almost equal to that of a Vice-Chancellor. But in India, colleges providing higher education were treated as "minors"

Dr Reddy said autonomy to colleges was necessary to promote efficiency and it should be viewed in the context of liberalisation and globalisation because students could compete with others only if they were efficient.

He regretted that while the British had given up their old concept of higher education, Indians still followed the old British model. Many groups, including teachers, still felt that the concept of affiliation was the best.

At present, there was too much centralisation in the universities. Fund, given by the UGC to a department, were sometimes diverted by the universities.

On restructuring the courses so that these could be made relevant to society's needs, Prof Reddy said even though no politician or any outside agency was an impediment, the

process of change in syllabi was difficult to initiate.

Stressing the need for a uniform academic framework in the country, Prof Reddy said there was little inter-state mobility among students and teachers for absence of such a framework.

A UGC-appointed committee was expected to submit its report within three months on the restructuring of courses. It was also likely to suggest how to vocationalise higher education.

The UGC Chairman said a college or a university should be like an enterprise. It should run short vocational courses in addition to regular courses so that it could earn some money. As of now, there was no incentive for the college to earn extra because of the 100-year-old formula that income by a college would be adjusted against the grant from the state. The Centre was now reconsidering this rule.

Prof Reddy regretted that the sole concern of Principals was not to provide academic leadership but maintaining law and order. One reason for this could be the fact that while appointing a Principal, a candidate's seniority was taken into account and not his interest in the job. There should be a regular training programme for the incumbents and they should not be left to learn their functions on the job.

Delivering the keynote address the former Vice-Chancellor of Rajasthan University, Prof M.V. Mathur, said if colleges and universities wanted to churn out good students the "Guru-shishya" tradition must be revived.

Regretting that many students joined colleges without any aim, Prof Mathur said degree should be

delinked from job requirements. He said the decision of the Finance Minister, Dr. Manmohan Singh, who had been a former Chairman of the UGC, to make donations to the universities tax free was a welcome step. But these donations should be first used to strengthen libraries.

The Vice-Chancellor of Kurukshetra University, Dr S. Arya, supported Prof Reddy's views on autonomy to colleges. But he said certain teachers feared retrenchment and other difficulties if the colleges were made autonomous.

Mr I.D. Shukla, President of the Haryana Private Affiliated Colleges Principals Association, also wanted the colleges to be autonomous.

Welcoming the delegates Dr C.L. Kundu, Director of the Kurukshetra University Academic Staff College, said the deliberations would go a long way in bringing reforms to higher education.

National Seminar on Organisations

Dr S.S. Mathur of the Centre for Energy Studies of the Indian Institute of Technology, New Delhi said that the educational system in practically every country, including the USA and the UK was under severe criticism and that there was no model which could be described as ideal. He was addressing the national seminar on "Organisations : bureaucratic and non-bureaucratic" organised by the inter-disciplinary forum of Guru Nanak Dev University in Amritsar recently. Dr Mathur said some systems, however, were better than others. The Indian system had a lot of scope for improvement. Basically, it required a different, realistic approach on the part of administrators, teachers as well as students.

Dr Mathur suggested certain measures to revamp the present system of higher education in India.

First, the universities should be made autonomous and government interference in policy making and day to day administration of the university should be done away with. For this, all committees of the university, including the Syndicate and the Senate needed to be reconstituted.

The second equally important reform, he said, was to ensure that the executive head of the university, the Vice-Chancellor, should necessarily be a person of outstanding academic merit and should have shown a higher degree of skill in providing academic leadership besides being an able administrator. A committee should be appointed by the Syndicate with representatives of the Syndicate, the faculty and students to select the best person available for this responsibility.

The third step was a reform in the syllabi. The syllabi in Indian universities had remained unchanged for so long that every one was convinced that no changes could be made in them. Options must be built into the system so that courses could be modified to varying degrees by the teacher or the department concerned as and when necessary.

The other changes recommended by Dr Mathur were in the student-teacher relationship and in the existing examination system.

Dr P.S. Gill of the Georgia Institute of Technology, USA in his lecture, said the freedom of the universities was being threatened in many parts of the world, particularly in India.

Dr Rita Aggarwal, Dr Jaspal Singh, Prof Prithipal Singh, Prof Purnima Mathur from IIT, New Delhi and Mr Dilbir Singh, a leading industrialist also presented their papers.

More than 100 delegates from different states participated in the seminar.

Counselling Centres for Computer Courses

Every institution under the Department of Electronics (DoE) would soon have a students' counselling centre on computer courses. This was revealed by Mr N. Vittal, Secretary, DoE, while inaugurating a workshop on DoE Accreditation of computer courses (DoE-ACC) scheme in Madras recently. He said the counselling centres would be manned by either officials of the institutions or volunteers of professional organisations such as the Computer Society of India (CSI) and the Institution of Electronics and Telecommunications Engineers (IETE).

Mr. Vittal said the DoE would also join computer training institutions in putting out advertisements for enrolment and other activities under the DoE-ACC scheme. The Manpower Division of the DoE had been instructed to mail lists of successful candidates under the scheme to public sector undertakings and other potential employers so that they were given priority in recruitment.

Though there was good response to the two year old DoE-ACC scheme certain areas had to be strengthened. Even when accredited, some institutions either avoided conducting the 'O' level courses or did not field candidates for the examinations. This raised doubts about the genuineness of the institutes. Perhaps the institutions were apprehensive that their candidates might not fare well in which case their reputation might suffer, Mr. Vittal said.

He also urged the delegates at the workshop to find an 'honest answer' to criticisms that the standards were too academic and only a few passed discouraging the students. A mechanism had to be thought of whereby the DoE-ACC programme could become a reference standard, say like the TOEFL and GRE examinations, Mr. Vittal said.

Mr. G. Ramachandran, Vice-President, CSI (which had been entrusted with the management of the DoE-ACC scheme for 'O' and 'A' level courses), said as part of its efforts to strengthen the Education Director of CSI, an institute of excellence in information technology in collaboration with Japanese assistance was to be set up. Besides, plans were afoot to conduct training for the trainers of 'O' level course.

Mr. S.A. Soundara Rajan, Madras chapter Chairman of IETE (which has been asked to conduct examinations for 'B' and 'C' levels under the DoE-ACC scheme), said the first 'B' level examinations would be conducted in December. As for the 'C' level, three examinations had so far been held in December 1991, June 1992 and December 1992, but all the candidates were direct entrants. There was none from the institution at Bhubaneswar, which was the one and only one to be accredited for the DoE-ACC examination.

Mr. Gautam Soni of DoE said the workshop was a part of a series to get a region-wise feedback on the DoE-ACC programme.

Question Bank on Rural Development

A three-day workshop on Question Bank on Rural Development Programmes – a course offered by the Indira Gandhi National Open University (IGNOU), was recently conducted at the Gandhigram Rural Institute. Inaugurating the workshop Dr. B.S. Nagarajan, Dean, Social Sciences of Gandhigram Rural Institute, said that Question Bank, though a western concept was an aid for teachers and students, especially in open universities. He added that Question Banks were need specific and location specific, and with their use cost reduction in evaluation was possible.

Dr. K. Soundaravalli, Asstt. Regional Director, IGNOU pointed out that distance education was not simply a correspondence course but there

was an inbuilt teacher in every lesson for distant learner. Talking about the features of question bank, she said that the text of question structure consisting of chosen words indicating clear specifications and media of answering were some of the dimensions of openness. And these question banks were ready for administration at any point of time, she added.

Dr. H.B.N. Shetty, former Education Secretary, Tamilnadu, briefed the net results of implementation of governmental schemes for the rural poor and believed that revitalizing panchayat institution would decentralize political and economic power to rural institutions. The rural poor questioning the reach of welfare schemes, upgradation of rural artisans, orientation of panchayat officials, people's representatives in panchayats should be the collective responsibilities of all concerned, he said.

Rs. 7.5 crore for Haryana Educational Institutions

The Haryana government has allocated Rs. 7.5 crore in its budget for the next financial year for capital expenditure on various institutions of higher learning under construction in Hisar.

Agroha Medical College has been sanctioned a grant of Rs 2 crore for the purpose. The Institute of Engineering and Technology being set up on the Delhi Road by-pass has been allocated Rs 5.27 crore. The proposed institute will run courses in textile technology, textile processing, textile design, industrial electronics and instrumentation and plant maintenance engineering.

The Kurukshetra University Regional Centre has been allocated Rs 20 lakh. The centre whose foundation stone was laid by the Chief Minister, Mr Bhajan Lal, in December last year is also being constructed on the Delhi Road by-pass.

Assam Botanical Society's Conference

The first conference of the Botanical Society of Assam was recently held in Guwahati. Inaugurating the conference Dr N.K. Choudhury, Vice-Chancellor of Gauhati University highlighted the need of giving more emphasis on plant life study, as plants were vital for survival of all living organisms.

Dr. U.C. Upadhyay, Vice-Chancellor of Assam Agriculture University, who was the chief guest, stressed the importance of botany which was the mother science of Agriculture. He appealed to botanists to collaborate with agricultural scientists to evolve better crops.

A symposium on "Save the species to save the planet earth" was also held on the occasion. It was discussed how destruction of flora and fauna had been threatening the survival of mankind.

Dr. R.N. Bhattacharjee, Professor of Cotton College and Secretary of the Organising Committee dwelt at length on the aims and objectives of the Society which was founded in 1992.

French Canadian Studies Seminar

A two-day seminar on French Canadian Studies was recently conducted by the Department of French of Pondicherry University in collaboration with Shastri Indo-Canadian Institute, New Delhi.

Prof. A. Gnanam, Vice-Chancellor, Pondicherry University, who inaugurated the seminar, emphasized the need for increased collaborative programmes with French Canada as Pondicherry had long been a seat of learning French and still provided a lot of research potential.

Prof. Herve Dupuis (Sherbrooke University, Canada), the chief resource person, pleaded for more recognition of his francophone Canada with its six and a half million French speaking population.

In his welcome address Prof. R. Kichenamourty, Head of the Department of French, Pondicherry University, highlighted the fact that the

francophone literature was increasingly becoming an integral part of the French curriculum in most universities in India and abroad just as commonwealth literature was recognised as part of English curriculum all over the World.

Mr. S. Anandavadivelou, of the French Department and the Course Co-ordinator of this seminar gave a bird's eye view of French Canadian history and civilization.

Papers were presented at the seminar on various aspects of French Canadian culture, civilization & literature. These included (i) Archival Education in French Canada; (ii) Michel Tremblay's theatre; (iii) Introduction to French Canadian literature – poetry; (iv) Comparative Study of "the symbolism of Earth in the French Canadian and Tamil Novels"; (v) Antonine Maillet: Quest for identity; (vi) "Anne Herbert" Anticlericalism in the works of Anne Hebert; (vii) Myth & Reality in Anne Hebert's Kamourashka; (viii) The Status of women in Pondicherry & Quebec.

About 20 teachers of French from different Indian universities and affiliated colleges took part in this seminar along with 25 students of the Department of French, Pondicherry University.

Eco-philosophy Centre

The Eco-philosophy Centre was recently inaugurated at the Dr Y.S. Parmar University of Horticulture & Forestry (UHF), Solan. Dr B.R. Sharma, Vice-Chancellor of the University presided over the function. It is claimed that the centre is the first of its kind in whole of Asia and one of the first in the world. The inaugural function was marked by special lecture by Prof Henryk Skolimowski, Chairman of Eco-philosophy, Technical University of Lodz, Poland who had been instrumental in starting Eco-philosophy centres in the University of Michigan, USA, Greece and Poland and now as an advisor to this centre. Another speaker on this occasion was Dr M.L. Dewan, a renowned soil conservation expert and environmentalist who had been the brain behind

the establishment of the Eco-philosophy centre at this university.

One of the tasks of this centre will be to clarify and articulate the shapes of the emerging ecological world view. The ecological perspective is so important to our healing of the Earth that each scholarly discipline should be informed and guided by it. One of the important roles of the centre will be to translate the ecological perspective into various endeavours of human thought and action.

The Centre will be a vital focus of enquiry, of education and of the preparation of the ecological sound ideas to India in particular and to the world at large. It will attempt to educate in a holistic way so that through this education, we can reclaim the environment now seriously threatened, and reclaim our spiritual destiny and our ancient traditions.

Further information may be obtained from Dr. P.L. Gautam, Dean, College of Forestry, Dr. Y.S. Parmar University of Horticulture & Forestry, Nauni-Solan-173230.

Nehru Award for M.S. Swaminathan

"Sharing of common genetic resources has been the backbone of global food security, and if the free flow of genetic material and information is disrupted the consequences will be serious. The implications of plant patenting and the destruction of common property resources would severely affect mostly the poor, and women in particular," said Dr. M.S. Swaminathan, Chairman, M.S. Swaminathan Research Foundation, Madras.

Receiving the Jawaharlal Nehru Birth Centenary Award 1992-93 instituted by the Indian Science Congress Association (ISCA) at a function organised by the Anna University, Dr Swaminathan in his special lecture on 'Agriculture cannot wait' said that the Dunkel draft on plant patenting and other genetic resources issues was highly compromised one.

Dr. S.Z. Qasim, General President, ISCA, presented the award. Dr. D.P. Chakraborty, general secretary briefly traced the history

of the Science Congress Association. Dr. M. Anandakrishnan, Vice-Chancellor, Anna University, welcomed the gathering.

AIU News

67th Annual General Meeting

The 67th Annual General Meeting of the Association of Indian Universities (AIU) was held at Pondicherry University, Pondicherry on February 21, 1993. This meeting scheduled to be held in 1992 was postponed twice during the year due to a variety of factors like dislocation of air traffic and disturbed law and order situation prevailing in the country.

The meeting was inaugurated by Dr Bhishma Narayan Singh, Governor and Chancellor of Universities in Tamil Nadu. About 110 Vice-Chancellors/Directors of member universities/institutions and eminent educationists attended the meeting. After the welcome address by Prof A Gnanam, Vice-Chancellor, Pondicherry University, the Education Minister of Pondicherry, Mr Govindraj, Dr D. Swaminadhan, Member (Education), Planning Commission, Prof G. Ram Reddy, Chairman, UGC, also addressed the gathering.

The main focus of discussion at the meeting was on AIU's Memorandum to the Government of India on the funding of universities and the general body was equivocal in its opinion that the government at the centre and states have to provide adequate funds to the universities to avoid further erosion in the standards of teaching, research and extension.

Other issues discussed at the meeting included debarring by some traditional universities of graduates from open university from registering for Ph.D degree, giving weightage to internal assessment marks while granting admissions and the need to provide physical education as a part of education in all educational programmes, accountability in the university and college system, administration of af-

filiated colleges, setting up of autonomous colleges, provision of funds by the UGC to medical universities for specialised subjects like bio-technology etc., modernization of university libraries, appointment of academics as regular vice-chancellors and restriction of access to higher education to deserving students only.

One-day National Seminar on 'Excellence : Achieving Social Relevance in Higher Education' was held on February 22, 1993. The Keynote paper by Prof Mohit Bhattacharya, VC, University of Burdwan, in his absence, was presented by Prof S K Agrawala, former Secretary General, AIU. Thereafter, case studies on the extension programmes of Mangalore University, Sardar Patel University, and Gandhigram Rural Institute, were presented by the respective vice-chancellors while in case of SNDT Women's University, the same was presented by Prof K H Bhansali, former VC of the University. The study of GB Pant University of Agrl. & Tech was presented by the Registrar of the University. The general body identified that for the success of extension programmes three important factors were crucial, i.e., functional involvement, development of curriculum, and human resource development. Accordingly three sub-groups were constituted to discuss these aspects for achieving social relevance in higher education. The recommendations of these sub-groups are being finalised.

Following the AIU's Conference, the UGC had its annual Conference of Vice-Chancellors on February 23, 1993 where the main theme for discussion was 'Financing of Higher Education'.

News from Agricultural Universities

Farm Development and Drainage

The scientists of Chaudhary Charan Singh Haryana Agricultural University (CCSHAU), Hisar have prepared a comprehensive plan for the control of rising water table and secondary salinization of soil. Its implementation, it is believed, will further increase the rate of production of quality seeds within Haryana and other adjoining states.

According to Dr. H.C. Sharma, Director Research, CCSHAU, the scientists were working on a project entitled, 'Farm Development and Drainage'. The project consisted of tile drainage, lining of water course and adoption of scientific technology and water management practices. The World Bank through the Indian Council of Agricultural Research has provided a financial sup-

port of Rs. 1.5 crore for creating tile drainage facilities to recycle the drainage water. Dr. Sharma further said that the university was meeting the quality seeds requirement of the state by producing more than 12000 quintals of breeders seeds and 10000 quintals of foundation seeds of different crops. With the implementation of this new comprehensive plan, Dr. Sharma hoped, the productivity of land will be further increased.

Under this plan, water storage facilities for collecting surplus rain or drainage water will be created. Similarly, for economic utilization of the water storage facilities like tanks and reservoirs, fishing programmes will be linked which will generate additional income.

News from UGC

Countrywide Classroom Programme

Between 2nd April to 7 April, 1993 the following schedule of telecast on higher education through INSAT-1D under the auspices of the University Grants Commission will be observed. The programme is presented in two sets of one hour duration each every day from 1.00 p.m. to 2.00 and 4.00 p.m. to 5.00 p.m. The programme is available on the TV Network throughout the country.

Ist Transmission

1.00 p.m. to 2.00 p.m.

2.4.93

"Climatic Past at Nalsarovar"

"By the People - V. Using Political Resources and influencing Political Decision"

3.4.93

"Theatre Exercises"

"INNOVATION : Getting There from Here"

"Week Ahead"

4.4.93

No Telecast

5.4.93

No Telecast

6.4.93

"Hypnotherapy - I
Medical Uses of Hypnotism"

"Ways of Thinking - V
Play of Light"

"The Scanner"

7.4.93

"Action Plan on Conservation of
Old World Fruit Bats"

"Pre-Historic Site at Arangpur"

"Yours Sincerely"

IInd Transmission

4.00 p.m. to 5.00 p.m.

2.4.93

"Theatre Exercises"

"Innovation " Getting There
From Here"

"Musical Notes and Their Origin"

3.4.93

No Telecast

4.4.93

No Telecast

5.4.93

No Telecast

6.4.93

No Telecast

7.4.93

"Action Plan on Conservation of
Old World Fruit Bats"

"Pre-Historic Site at Arangpur"

"Yours Sincerely"

We Congratulate.....

Dr. K. Hanumanthappa who has taken over as Vice-Chancellor of Sri Sathya Sai Institute of Higher Learning, Prasanthinilayam.

Inter University National Youth Festival

The eighth Inter University National Youth Festival (IUNYFEST) hosted by the Nagpur University was inaugurated by Dr. K.B. Powar, Secretary General of the Association of Indian Universities (AIU). In his address Dr. Powar observed that the Youth Festivals had become an integral part of the university culture and emphasized the need to cherish and nourish the fundamentals of the Indian way of living. "The foremost objective of the Youth Festivals", he said, "is to give the young talented students a chance to display their skills, besides bringing them into closer contact with their roots".

Speaking on the occasion Dr. S.Y. Quraishi, Joint Secretary, Department of Youth Affairs and Sports, Govt. of India, referred to the various new schemes, the Department was about to launch to inculcate the spirit of harmony and integration among the youth of the country. Shri Sampson David, Senior Cultural Officer, AIU, delved on how the youth festivals were helpful in fostering fraternity and love among fellow citizens. Dr. P.L. Bhandarkar, Vice-Chancellor of the host university, welcomed the invited youth and formally released the copies of "Yuva Rang" – the daily news bulletin of the Festival.

The Festival opened with a group song, promoting brotherhood and 'Sadbhavana' presented by Bombay University. Banaras Hindu University followed suit with a bhojpuri folk song "Aali aayee ritu matwali". This was followed by a group folk song in Marathi "Maharashtra Chi Maati" presented by Shivaji University. Mahatma Gandhi University presented a unique combination of Malayali lyrics and Western music. Bharathidasan University and Berhampur University together presented a group song.

The competitive cultural events unfolded with the mixture of theatrical and musical items. The 'Mime' events showed that 'action speak louder than words'. 'The unity of Indian culture lies in its diversity' was the theme chosen by all the seven teams though they varied in depicting the Indian scenario. The North Gujarat University highlighted the need for kindness towards the poor whereas Guru Nanak Dev and Kerala representing the two poles of Indian sub continent, highlighted tragic issue of dowry and the subsequent burning of brides in our society. The Jabalpur, Berhampur, Alagappa and Jammu Universities also rendered graceful performances.

In the Skit contest all the eight teams depicted the stigma of nation struggling in the clutches of unhealthy elements. The Marathwada University presented a vivid picture of the unemployment scenario which even forces a graduate to take up the job of an obedient dog for a paltry sum and dies like one too as even the dogs disapprove of the idea of a human being invading their territory. The Banaras Hindu University team depicted the pathetic condition of our outdated education system and the changing values of the youth including their impact on the employment scene. It ended its performance by asking as to 'who' was responsible for this sorry state of affairs. The Mahatma Gandhi University presented a hilarious comedy by ridiculing the contemporary social situation while Utkal University presented a true picture of the sad state of the Indian sports.

Then followed the tunes of classical percussion instruments in which one contestant after another displayed their skills. Sandhya Prabhu of Kerala University played the 'Mirdangam' while Hemant Joshi of Gujarat University enthralled the

audience with a 'tritaal, uthaan, peshkar and rela'. Devendra Yadav of Amravati, Neeraj of Jammu, Shri Pandit of Dharwad University also displayed their skills in the art.

In the Fine Arts section, entries of 'On the Spot Painting' presented an impressive display.

Seven teams were in fray in the Quiz section, of which three qualified. Bharathidasan, Bombay and Kerala Universities reached the finals. The twelve round competition had two rounds which comprised audio and visual programmes. The nature of questions ranged from culture, science to sports and the evolution history. The Kerala University emerged the champion followed by BHU and Bombay.

The Indian Group Songs began with a composition of the renowned poet Dr. H.R. Bachchan presented by Amravati University. This was followed by a presentation of Manipur University which reminded one of the precious gifts bestowed by nature to the mankind. The Maharshi Dayanand University welcomed the rains with 'Ghir-Ghir aayi megha salona' while compositions of Banaras Hindu University and Bharathidasan University imbibed the spirit of patriotism. Jammu University presented a melodious Dogri folk song.

In the Western Group Song competition, Assam Agri. University rendered their popular number "We're the World". Bombay, Bharathidasan and Mahatma Gandhi Universities also rendered impressive performance.

Next competitive item was classical dances in which the young stars from different universities participated. These included Sarita Sinha (Kathak) of Ravishankar University; S. Lekha (Bharathnatyam) of Mahatma Gandhi University; Seema Shethy (Bharathnatyam) of Bombay University; D. Sudharani (Odissi) of Utkal University; Anuradha Seth (Kathak) of Jammu University and Shabnam Sharma (Kathak) of Punjabi University.

The Folk Dances Contest opened with the enchanting 'Bihu' dance presented by the students of Gauhati University. This was followed by Punjabi University performing the 'Bhangra'. The performance rendered by the students of Shivaji University depicted the traditional 'Vadhya-

Murali' invoking Lord Khandoba (Marathi Matand). The folk dance "Garba" which stole the lime light, was presented by Bhavnagar University.

At the valedictory function Air Marshal Ramamurthy, was the chief guest. Speaking on the occasion he lauded the performance of the young

artists and gave away the commendation certificates, mementos, medals, etc.

Over 800 invited university youth artists and officials from 49 universities participated in the five-day youth festival.

INTER UNIVERSITY NATIONAL YOUTH FESTIVAL

RESULTS

(A) MUSIC

(1) Classical Vocal (Solo) (Hindusthani & Karnataki)	i. Bombay University	(5) Western Vocal (Solo)	iii. Punjabi University
	ii. Banaras Hindu University		iv. Telugu University
	iii. Kerala University		i. Bombay University
	iv. Karnatak University		ii. Assam Agricultural University
(2) Classical Instrumental Solo (Percussion)	i. University of Agricultural Sciences	(6) Group Song (Indian)	iii. Bhavnagar University
	ii. Amravati University		iv. I.S.M., Dhanbad
	iii. Gauhati University		i. Amravati University
	iv. Kerala University		ii. Manipur University
(3) Classical Instrumental Solo (Non Percussion)	i. Andhra University	(7) Group Song (Western)	iii. Bharathidasan University
	ii. Guru Nanak Dev University		iv. S.N.D.T. University
	iii. Kerala University		i. Mahatma Gandhi University
	iv. Indira Kala Sangeet Vishwavidyalaya		ii. Bharathidasan University
(4) Light Vocal	i. Shivaji University		iii. Bombay University
	ii. Devi Ahilya University		iv. Assam Agricultural University

(B) DANCE**(1) Folk/Tribal Dance**

- i. Punjabi University
- ii. Bhavnagar University
- iii. Shivaji University
- iv. University of Agricultural Sciences

(2) Classical Dance

- i. Ravishankar University
- ii. Mahatma Gandhi University
- iii. Devi Ahilya University
- iv. Utkal University

(C) LITERARY EVENTS**(1) Quiz**

- i. Kerala University
- ii. Banaras Hindu University
- iii. Bombay University

(D) THEATRE**(1) One Act Play**

- i. Manipur University
- ii. Guru Nanak Dev University
- iii. Bombay University
- iv. Kerala University

(2) Skits

- i. Marathwada University
- ii. S.N.D.T. University
- iii. Guru Nanak Dev University

(3) Mime**(E) FINE ARTS****(1) On the Spot Painting**

- iv. Mahatma Gandhi University
- i. North Gujarat University
- ii. Kerala University
- iii. Algappa University
- iv. Rani Durgavati University

- i. Banaras Hindu University
- ii. Utkal University
- iii. Jammu University
- iv. Calicut University

(2) Collage

- i. Punjabi University

- ii. Calcutta University

- iii. M.L. Sukhadia University

- iv. Mahatma Gandhi University

(3) Poster Making

- i. Jammu University

- ii. Karnatak University

- iii. Gauhati University

- iv. M.L. Sukhadia University

(4) Clay Modelling

- i. Mahatma Gandhi University

- ii. Utkal University

(5) Cartooning

- iii. Gauhati University
- iv. Karnatak University
- i. Gauhati University
- ii. Karnatak University
- iii. Jiwaji University

(6) Rangoli

- iv. Jammu University
- i. K.S.D.S. University
- ii. Banaras Hindu University
- iii. Banasthali University
- iv. Bhavnagar University

CHAMPIONSHIP

- 1. Music : Bombay University
- 2. Dance : Punjabi University

- 3. Literary Events : Kerala University
- 4. Theatre : Guru Nanak Dev University
- 5. Fine Arts : Gauhati University & Jammu University (Jointly shared)

OVERALL CHAMPIONSHIP

Bombay University & Mahatma Gandhi University (Jointly shared)

RUNNERS UP

Punjabi University

PROCESSION AWARD

- 1. Bhavnagar University
- 2. Bharathidasan University

DEBATE (Non Competitive)

- 1. Ku. Shefali Vaidya, Goa University
- 2. Mr. R. Ramakrishnan, Kerala University
- 3. Mr. P. Anand, Manonmaniam Sundaranar University

CALENDAR OF EVENTS

Proposed Date of the Event	Title	Objective	Name of the Organising Department	Name of the Organising Secretary/ Officer to be contacted
May 25-27, 1993	Sixth Annual Conference of the All India Association for Educational Research	Theme: Research in Educational Management	All India Association for Educational Research in collaboration with St. Ann's College of Education, Mangalore	Dr (Sister) Lydia Fernandes A.C., Principal, St. Ann's College of Education, Managalore
1st Week of June, 1993	Annual Conference of Indian Academy for Instructional Planning	Theme : Instructional Planning – an educational rethinking	Pravara Rural College of Education, Pravaranagar, Dist. Ahmednagar	Dr. P.L. Kirkire Secretary, LAIP, BEd. College Loni (Pravaranagar) Dist Ahmednagar-413712
December 14-16, 1993	1993 Annual Conference of the Society for Research into Higher Education	Theme: Governments and the Higher Education Curriculum: Evolving Partnerships	Society for Research into Higher Education, London	Prof. Tony Becher, EDB, University of Sussex, Falmer, Brighton BN1 9RG

The Exploitation of Tribal Communities

S.K. Tiwari*

P. Ramaiah and K. Murali Manohar. *Tribal Indebtedness*. Bombay, Himalaya Publishing House, 1992. Pp. 103. Price Rs. 125.00

The book under review is the study of one of the major constituents of tribal misery. Marginal societies all over the world are exploited to an extent that they are forced to subsist on various types of debts. As a rule utter dependence for money on resourceful persons makes the tribals vulnerable to social injustice. The book, based on 504 sample tribal households examines the extent and magnitude of tribal indebtedness among 5 out of 33 tribal communities of Andhra Pradesh. The authors of the book have chosen right sample size for their study. The five tribal communities selected for the study represent all the major socio-economic categories of Andhra tribes.

The book is divided into 4 chapters, namely, 1. Tribal Life and State Policy, 2. Land and People, 3. Tribal Indebtedness, and 4. Conclusions and Suggestions.

Considering the size of the book – 103 pages, the bibliography is exceptionally rich covering one fifth of the

book. This may be so because the chapter on indebtedness having absolutely no discussion on the nature of tribal debts, the reader has to satisfy himself with whatever he gets from bibliography.

Indebtedness is not the simple state of being in monetary debt, it is also not the mere borrowing as well. In the tribal society the problem is intricate with the traditions and primitive concepts of credit and capital. Lack of a purposeful discussion on the indebtedness has made the details of debts leading to obscure conclusions.

The first chapter divided into 3 unrelated parts gives description of 'Tribal life'. Part A includes the economy of 5 Andhra tribes namely Koyas, Chenchus, Gonds, Kolams and Naikpods. Part B deals with tribal policies of Pre-and Post-independence period, and Part C is the survey of literature.

Parts of the chapter are written casually to allow loose statements. For instance part B starts with the sentence 'India with the exception of Africa has the largest concentration of tribal population in the world', a wrong comparison as the comparison is made between two incomparable units. India, a nation should

only be compared with an African nation, else Africa, a continent has to be compared with Asia or some other continent. Such norms are observed in academic literature. The survey of literature is another example of such casual approach. Here, a list of names of distinguished authors and tribal programmes without any analysis has been given. Professor Haimendorf figures relatively high in the book. His literature is well known for highlighting the exploitation of tribals particularly those living in Andhra. His works are now regarded controversial by a section of Indian scholars who find Haimendorf portraying every non tribal whether a forest guard, a merchant, a non-tribal peasant or a priest of the temple or for that matter any Indian as the exploiter of the poor tribals. Haimendorf is said to have safely forgotten the exploitative policies of British and Nizam of Hyderabad, who was his employer. The others who appreciate his works find a noble genius in him which led him to analyse the tribal problems. Since most of Haimendorf's work is related to the exploitation of Andhra tribes, it was expected from the authors to express their valuable opinion about the works of Haimendorf in their overview of literature. We find the authors to be fond of only citing the names of the authorities. Their remembrance of the distinguished anthropologists and economists without referring to their works is really strange.

'Researchers like Dube, Kamaladevi, Chattopadhyaya, D.N. Majumdar, G.S. Ghurye, L.P. Vidyarthi to make mention of the few in the glory of anthropologists, have rendered commendable service to the cause of

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tribal upliftment'. (p.14) The works of D.N. Majumdar and G.S. Ghurye have not even been listed in the long Bibliography.

Whereas a purposeful and much needed discussion either on indebtedness or on the tribal literature is either missing or casually treated, such out of context details as geological formations of two districts of Adilabad and Warangal have been given. Needless to say that such details are not related even in the remotest way with the tribal indebtedness.

Funded social researches are prepared on standard proforma, consisting of certain points, amongst these 'Overview of literature', 'Objectives', 'Methodology', 'Coverage' 'Time Budgeting' and 'Cost Estimation' are important. The authors have wisely opted to drop the last two. The present work originally a U.G.C. research project has not shed its colour of a project report.

With all its limitations this portion dealing with objectives and methodology is one of the best composed parts of the book. The objectives are well crystallized, the methodology and the selection of research universe are clear. The coverage of the study is reasonable. It is 'a model work for those who intend to prepare a research design for a funded research. Every well written work on social sciences imbibes these points but normally reports rather than the books retain such sub-headings.

The first chapter emerges to be a conglomerate of the details on tribal life, literature and the methodology.

In chapter II, again divided in two Parts A & B, the authors have been careful in data collection as the data is of diverse nature. The

presentation is scientific and compact.

In the 'Summing Up', salient features of the tribal population under study become clear. For instance 86.90 percent of the tribal population is now engaged in agriculture as against a mere 1.38 percent in minor forest produce collection.

The third chapter divided into 2 parts deals with the 'Magnitude' and the 'Causes of Indebtedness'. The authors use 15 tables to represent the economic variables. Too much of statistics without adequate explanation has resulted in confusion and contradiction.

The chapter starts with the findings of Elwin Committee: 'The burden of debt becomes heavy and unbearable and the tribal is commensurate with the source of income. The tribal borrower, therefore is born in debt, lives in debt and dies in debt'. (p.57)

The authors seem to be over-convinced by the jargon of Elwin when they support his statement in the following extracts:

The non tribal moneylenders offer him all kinds of credit liberally in order to take possession of the movable and immovable assets of tribals. (p.57)

Our authors do not cite a single instance of grabbing of movable or immovable assets of any tribal household. While submitting numerous monetary details in tabular form they do not provide a table for such alienations. This is not possible under the existing laws.

The tribals of Andhra do not seem to 'live in debt and die in debt'. The book provides contradictory evidences. Amongst all the loan

takers only 22 families (5.62%) of the debtors and merely 4.4% of the surveyed tribal households) were found to seek loan for repayments of old debts, which by any standard is an extremely small percentage.

Magnitude of Debt

The dictionary meaning of 'Debt' explains it as 'money, goods, or service, owing, being under obligation to pay something' and a debtor 'is that one who owes money'. In this sense anybody who takes money or obligation is in the state of 'indebtedness'. But economists recognise a variety of debts and their components; these are 'loans', 'commitments', grants, short term debt, etc.

Even if a man or community is under the state of indebtedness it is not automatically plunged into the abyss of sufferings, in most cases especially in developing economies such loans are the tool of progress.

However we leave this inadequacy here. To examine the nature of tribal debt we for a while term these loans as 'non-troublesome' and 'troublesome' loans. In the table given here 'grants, soft loans and commitments' are essentially non-troublesome debts or borrowings. Such categories of loans are given here to examine the real magnitude of the indebtedness which is not as bad as it is portrayed. Even private money lending system is not that great a menace as it has been made out to be 'living cancer that has eaten into vitals of the economic life of the tribals' (Page 80). In fact the statistics produced in the book do not conform to the gloomy picture.

The Data Rearranged

% of Surveyed population	Indebtedness		Details
100%	1.	No of Surveyed households	504
	2.	No of households with no debt	112
<i>Borrowing</i>			
	3.	No of households with debts	392
	<i>Details of Borrowing Households</i>		Grants and (Soft loans, i & ii)
112	i)	Interest Free Borrowing	69
+	ii)	Borrowing from Banks, etc.	107
208		(Rate of interest 18%)	208
	iii)	Borrowing from own tribal kiths and kins	32
320		(Rate of interest 24%)	
or	iv)	Debts from Professional non tribal moneylenders	127
64%		(Rate of interest 36%)	
Debts			(Short term debt)
127			iv) To meet expenses of festivals, etc.
=			
25%	v)	Borrowing from mixed sources in terms of cash and grain	57
36%		(Rate of interest 48 to 100%)	v) Luxury and for sowing
11%			

The data provided in the book, if arranged in a manner showed above exhibit a mere one third surveyed population in troublesome debt. The majority, however, falls in the 'non troublesome' debt category.

Debts carrying nil interest, are obtained by the tribals, from 'AWARE' a voluntary organization. Debts from banks and cooperatives etc. are also borrowing of this sort as this money lending facility has provisions of subsidies. Borrowing from tribals as per their customs is 'commitment' type of debt as it is payable in a variety of ways. Thus 64% surveyed population should not be regarded as troubled due to indebtedness. The remaining one third population was indebted. These households (one fourth) had to pay 36% inter-

est, which is high but not 'exorbitant'.

Exorbitant Interest Rate

11% of the surveyed population is reported to have suffered the 'exorbitant' interest rate running from 48 to 100%, but even this high interest rate has its socio-cultural aspect. This high interest rate is paid only on two occasions as reported by the authors :

(a) As repayment of 'Conditional Debt'

The conditional debt is taken by tribals from various sources (i.e. from tribal and non-tribal money lenders) at the sowing time. In fact this is in the form of the seed grain for sowing. There is an age old tradition amongst agrarian societies

in India that the farmer returns double or one and half times of the seed grain after the harvest. Our authors are horrified at this unlawful exploitation as they write :

'In this type of practice, exploitation rate will be high and the rate of interest is often exorbitant and unlawful'.

(b) Borrowings for Social Functions

In this small bracket of 11% debtors there is also a subsection of debtors who borrow money at high interest rate during social functions. The authors wisely write about this :

'It is depressing to note that 26.40 percent of the expenditure is incurred on the above mentioned (marriages, funeral ceremonies, jatras, etc) unproductive items.'

The authors have not separately calculated the 'social' and 'conditional' debts.

Identification of the Real Sufferers and Exploiters

It has been presumed that the moneylenders who charge 36% interest are the real exploiters. As far as the landlords are concerned they are said to charge 'between 18% to 24% depending upon the relationship' (p.66). If these interest rates are comparable to the rates the non-tribals pay remains unknown.

The authors do not provide the average incomes of people with different size of land holding. Had they done so, the real effectiveness of indebtedness would have been crystal clear. We have to contend only with the average income (Rs. 5617.41) of households. This average at least crudely indicates that the landless labourers are not imperilled by indebtedness. Table

3.11 shows average debt on landless labourers as Rs. 132.90. In fact a very large percentage of indebted people have to pay very little. About one fourth of the total debtors are in the debt range of Rs. 100 to Rs. 105 and another one fourth in the debt range of Rs. 500 to Rs. 510.

Major Debtors

Table 3.11 indicates that highly indebted households are those who possess 10 or more acres of agricultural land. The average debt of this category of people is Rs. 3,493-03 which is a petty amount considering their income. These households who are rich tribal farmers have borrowed money from AWARE and banks and they are not at a risk of losing moveable or immoveable property.

High debt range is very small amongst tribals of the study area :

Debt Range	Rs. 5500 to Rs. 5560	Rs.6000 to Rs.6070	Rs.7000 to Rs.7080	Rs.8000 to Rs.8010
No. of House holds	02	05	07	02
% of debtors to the total debtors	00.51	01.28	01.79	00.51

There were only 07 households (01.79%) who took loan of Rs. 10,000.00 or more. All these high debt range debtors form about 4% of population of the high indebted households.

This high bracket debt is in fact based on the average income of the entire surveyed population and not on the average income of richer tribals. However this debt which in-

cludes non interest money and subsidies also is spent on the following development works and items.

Item	Percent of total Debt
1. Land Development	8.93%
2. Fertilizers	10.02%
3. Engine	3.31%
4. Crop loan	9.43%
5. Purchase of Bulls	5.50%

About one third of the total debt is on development items.

The Results

The results of the study are really unforeseen as sizeable tribal households are known to have switched towards better agricultural methods; for the first time in their long tradition, they are known to use fertilizers, better seed, bullocks and power engines. They have now irrigated fields. The productivity has increased and so have the land holdings as the authors put in the table.

Generation Background of Land Holdings (in acre)

Region	Grand Father	Father	Respondent
Khamman, Warangal Mahboobnagar and Adilabad Districts	672.00	2000.85	2421.70

If the grandfather's holdings are 100 then father's holding has increased by 336% and respondent's by 360% over his grandfather's - a spectacular growth totally brushed aside by our learned authors. This growth is the result of implementa-

tion of tribal polices of Independent India.

Chapter 4 entitled Conclusion and Suggestions submits as many as 12 suggestions for the betterment of tribal people. The intention of the authors is noble and praiseworthy when they suggest to develop forest economy, horticulture, sericulture, irrigation wells, check dams, rehabilitation of shifting agriculture etc. They have also suggested for the better efficacy of M.A.D.A by putting an I.A.S. officer for each M.A.D.A pocket. This may be difficult but the advice is sincere.

The book needed a location map of the study area and few statistical diagrams would have given more graphic picture of the study.

Our tribals are the poorest communities of the poor third world. Their primitive economy is far from satisfactory. The indebtedness is one of the reflections of their poverty. In the recent years tribals have attained more attention of the Indian government and the Indian society which has put these marginal people on the path of progress. The rate of progress is slow when compared to other societies but it is spectacular when it is judged with their own social histories. The book is full of economic facts which are interesting and well researched. It is a nice piece of research throwing light on the achievement of the tribals. The book very rightly concludes that the 'tribals will certainly join the mainstream of national life'. (p.88)

An Authoritative Work

M.V. Pylee*

Giridhar Gomango. *Constitutional Provisions for the Scheduled Castes and the Scheduled Tribes*. Bombay, Himalaya Publishing House, 1992. Pp. 259. Rs. 175.

The Constitution of India is unique in several respects. It is the longest and the most elaborate. It is also the most comprehensive. It includes provisions which hardly any other Constitution has. The subject of this book deals with such provisions.

India is a land of immense diversity. From a religious point of view Hinduism and Islam are the leading faiths. But there are considerable numbers of adherents of other religions like Christianity, Sikhism, Buddhism and Jainism. Among the Hindus, who are traditionally divided into different castes, are a large number of the most backward sections called the Scheduled Castes. There are also the tribal people who occupy certain isolated pockets in different parts of the country, almost cut off from the rest of the people. Their total population is over 20 percent, and in absolute terms is quite large.

A Constitution which proclaims that it stands for justice, equality and fraternity and which prohibits discrimination on grounds of race, religion, caste, sex or place of birth could not ignore special provisions being included in it to protect these backward classes. In fact, the Constitution has done it with meticulous care and made elaborate provisions for the advancement of these sections of the community. Their social, economic, political and

*Director General, Asian Institute of Development and Entrepreneurship, Cochin and Former Vice-Chancellor, University of Cochin.

educational progress has been a great concern of the Constitution-makers and this can be seen from the large variety of provisions made in the Constitution. This book provides a comprehensive treatment of those provisions with a critical analysis of the important special provisions and contains very useful, up to date information on them.

The book is divided into three Parts. Part I gives an analysis of the important constitutional provisions. Part II brings together at one place provisions lying scattered in different chapters of the Constitution dealing with (i) the Scheduled Castes, and (ii) the Scheduled Tribes. Part III includes Acts, Notifications, Orders, etc. dealing with scheduled castes and tribes. There are in addition six Appendices which contain

valuable information on statewide details regarding different aspects dealing with the welfare of scheduled castes and tribes.

The author has taken great care to collect all relevant pieces of information regarding scheduled castes and tribes and bring them together in this volume. As such it is a very valuable work of reference. In fact, this is the first time that such a work has been undertaken in the country.

The privileged position that the author holds as a Minister (Minister of State, Government of India) seems to have helped him to collect all the relevant material without the usual difficulty which anyone else would have encountered in gathering it. The result is that we have now an authoritative work which can be confidently used for reference purposes by all those interested in the subject, such as administrators, politicians, social workers, students and the general public.

The printing and production of the book are of high standard, although the price is somewhat on the high side.

Communication

Cross Breeding in Indian Universities

Kudos to Professor Ramesh K. Srivastava for his article "Need for Cross Breeding in Indian Universities" published in your esteemed journal, *University News* dated 1st February 1993. Your readers may be happy to know that most of his ideas regarding recruitment of lecturers are being implemented by our college. I wonder why the UGC does not enforce its own rules regarding recruitment and promotion since there are no financial im-

plications in such implementation. On the contrary, it may result in some savings and great improvement in efficiency and morale of all concerned.

S. Kumar
Principal
Narmada College of Science,
Technology and Commerce,
Zadeshwar,
Bharuch (Gujarat)-392011.

RESEARCH IN PROGRESS

A list of Research Scholars registered for Doctoral Degrees in Indian Universities

PHYSICAL SCIENCES

Mathematics

1. Anilkumar, C.V. Coding and information theory. Kerala. Dr V Sathyabhama, Prof, Department of Mathematics, University of Kerala, Kariavattom.
2. Beena, S. Some problems in algebra connected with ring theory. Kerala. Dr M I Jinnah, Reader, Department of Mathematics, University of Kerala, Kariavattom.
3. Jhala, Tushar Kant. A study of some approximation problems by Fourier expansion. Vikram. Dr Ashutosh Pathak, Lecturer, School of Studies in Mathematics, Vikram University, Ujjain.
4. Manju, B R. The structure of certain classes of semi-groups that arise in the studies of formal languages. Kerala. Dr A R Rajan, Reader, Department of Mathematics, University of Kerala, Kariavattom.
5. Singh, Suraj. A contribution of Fourier series and allied series. Vikram. Dr Prem Chandra, Prof, School of Studies in Mathematics, Vikram University, Ujjain.

Physics

1. Bhatt, Ravi. Study of equation of states in solids. Vikram. Dr B D Shrivasta, Prof, School of Studies in Physics, Vikram University, Ujjain.

Chemistry

1. Nair, Ambili P. I-Novel applications of electro-organic chemistry in organic synthesis, II-Synthesis of novel heterocycles as insect control agents. Kerala. Dr G V Nair, Deputy Director, Regional Research Laboratory, Thiruvananthapuram and Dr C P Joshua, Prof, Department of Chemistry, University of Kerala, Thiruvananthapuram.
2. Nizamuddin. Biochemical studies on fibronectin. Delhi. Dr Ramesh Chandra, Department of Chemistry, University of Delhi, Delhi.

Earth Sciences

1. Manoj Kumar. Development and management studies on ground water resources of the area around Nandini Nagar, Durg, M P. Vikram. Dr Pramendra Dev, Reader, F-2/11, Vikram University Campus, Ujjain.
2. Shaji, E. Controls and processes in the formation of cordierite-bearing metapelite of Kerala State with particular reference to the occurrences in Trivandrum and Quilon Districts. Kerala. Dr R Krishnanath, Reader, Department of Geology, University of Kerala, Kariavattom.
3. Sugatha, V V. Hydrogeology of parts of Neyyar river basin. Kerala. Dr V Narayanan Nair, Reader, Department of Geology, University of Kerala, Kariavattom.
4. Suraj, G. Characterisation of marine clays and their role in the uptake of heavy metals. Kerala. Dr M Lalithambika, Head, Clays and Mineral Unit, Regional Research Laboratory, Thiruvananthapuram and Dr C S P Iyer, Head, Department of Ocean Development Unit, Regional Research Laboratory, Thiruvananthapuram.

Engineering & Technology

1. Gupta, Ajaykumar. An expert system for fault diagnosis of inertial guidance system. Kerala. Dr A K Pujari, Director, Computer Centre, University of Kerala, Thiruvananthapuram.

2. Renukakumari, J. Reliability of metallic framed structures. Kerala. Dr K V Valsarajan, Prof, Department of Civil Engineering, College of Engineering, Thiruvananthapuram.

BIOLOGICAL SCIENCES

Biochemistry

1. Gopinath, Lakshmi. Study of mitochondrial system of filarial parasites. Kerala. Dr R Kalesya Raj, Department of Biochemistry, University of Kerala, Kariavattom.

Botany

1. Mittal, Deepika. Microbial biotransformations of aflatoxins. Delhi. Dr Ved Pal Singh, Department of Botany, University of Delhi, Delhi.
2. Srivastava, Nalini. Structure and development of somatic embryos in some umbelliferae. Delhi. Prof N N Bhandari and Dr S S Bhojwani, Department of Botany, University of Delhi, Delhi.

Medical Sciences

1. Varkey, Joyamma. Effect of certain herbal drugs as antilithatic in experimental urolithiasis. Kerala. Dr N Jayanthi Bai, Prof, Department of Biochemistry, Medical College, Thiruvananthapuram.

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THESES OF THE MONTH

A list of Doctoral Theses accepted by Indian Universities

PHYSICAL SCIENCES

Mathematics

1. Agarwal, Arvind Kumar. A study of Rodrigues formulae and generating relation of special functions. Bundelkhand. Dr P N Shrivastava, Reader, Department of Mathematics and Statistics, Bundelkhand University, Jhansi.
2. Baruah, Mukut Ch. Thermal boundary layer in third order fluids. Dibrugarh. Prof G C Sarma, Department of Mathematics, Dibrugarh University, Dibrugarh.
3. Chandrasekhar Reddy, K. XLAR: The cognitive architecture for intelligent action. Hyderabad. Prof P G Reddy and Prof B E Prasad.
4. Dev, Navkant. Some problems on the order of convergence of functions by special classes of positive linear operators. Ghasidas. Dr S P Singh, Head, Department of Mathematics, Guru Ghasidas Vishwavidyalaya, Bilaspur.
5. Dhoble, Ashokkumar R. Commutativity of non commutative associative rings and its generalizations. Nagpur. Dr R D Giri, Department of Mathematics, Nagpur University, Nagpur.
6. Geetha, S. Studies on fuzzy topological semigroups and related areas. CUST. Dr T Thiruvikraman, Director, School of Mathematical Sciences, Cochin University of Science and Technology, Kochi.
7. Hari Mohan. Some stability problems in hydrodynamics and hydromagnetics with reference to thermal and thermohaline convection. HP.
8. Lala, Archana. A study of mixed boundary value problems in potentiation involving special functions as kernels of dual and multiple integrals. Bundelkhand. Dr P N Shrivastava, Reader, Department of Mathematics and Statistics, Bundelkhand University, Jhansi.
9. Madhusudhan, A. Analysis of ecological models involving time delays. Osmania.
10. Misra, Snehalata. Biometry-Biometrical studies on the population development of the key pests in rice. Berhampur. Dr G Mohanty, Reader, School of Mathematical Sciences, Sambalpur University, Jyoti Vihar, Burla.
11. Mukhopadhyay, Minakshi. On some problems related to elliptic cracks and punches. Calcutta.
12. Nigam, Sarvesh. Study of some aspects of flows of viscoelastic fluid in tubes. Bundelkhand. Dr S C Chaturvedi, Principal, J N K College, Banda.
13. Prabhakar Reddy, K. Some problems in fluid mechanics. Kakatiya. Prof N Ch Pattabi Rama Charyulu, Department of Mathematics and Humanities, Regional Engineering College, Warangal.
14. Raizada, Samir Kumar. A study of unified presentations of special functions of mathematical physics and their use in statistical and boundary value problems. Bundelkhand. Dr P N Shrivastava, Reader, Department of Mathematics and Statistics, Bundelkhand University, Jhansi.
15. Samal, Sapan Kumar. Some problems of elastodynamics. ISM. Dr B K Rajhans, Asstt Prof, Department of Applied Mathematics, Indian School of Mines, Dhanbad.

16. Sen, Shyambabu. A study of generalisation of biorthogonal sets of polynomials associated with classical polynomials. Bundelkhand. Dr P N Shrivastava, Reader, Department of Mathematics and Statistics, Bundelkhand University, Jhansi.

17. Shrivastava, Kishore Kumar. Numerical simulation of strong discontinuities in a conducting plasma. Bundelkhand. Dr V K Singh, ITE, Lucknow.

18. Sundara Rao, M J. A study of operator and matrix equations. Osmania.

19. Uma, G. A framework for modelling and analysis of distributed intelligent systems. Hyderabad. Prof P G Reddy and Prof B E Prasad.

Statistics

1. Chattopadhyay, Aditya. Some contributions to the study of life distributions. Calcutta.

2. Krishna, D. Study on the application, usage and comparison of some multivariate statistical techniques. Osmania.

3. Nandi, Shyama Nayan. Economics design of control charts. Baroda.

4. Singh, Arun Kumar. Estimation of pollution mean using auxiliary information in sample surveys. ISM. Dr L N Upadhyay.

Physics

1. Ashok Kumar. Calibration of fission track dating system and its application in geothermo chronometry of a part of NW-Himalaya in Zaskar and Himachal Pradesh. Kurukshetra.

2. Bandyopadhyay, Narayan. Finite temperature quantum field theories in flat and Robertson-Walker space-times. Calcutta.

3. Basumallik, Bireswar. Investigation of some classical and quantum integrable systems through Yang-Baxter equation. Calcutta.

4. Charles, J Benet. Studies on growth and characterisation of sodium fluoroantimonates. Anna.

5. Chattopadhyay, Silabhadra. A study of role of fluctuations and time correlation in damped heavy ion collisions. Calcutta.

6. Das, Asish Kumar. Acoustical behaviour of some liquid systems. ISM. Prof B L Jha, Head, Department of Applied Physics, Indian School of Mines, Dhanbad.

7. Datta, Manisha. Study of electrical properties of amorphous materials. Calcutta.

8. Gupta, Ram Kumar. Some studies on bipolar junction transistor, field effect transistor and metaloxide semiconductor field effect transistors at high frequencies. Durgawati. Dr V K Farakya, Department of Physics, Rani Durgawati Vishwavidyalaya, Jabalpur.

9. Harjinder Singh. Perturbed angular correlation and decay studies with some odd-a nuclei. Punjabi. Prof H S Sahota, Department of Physics, Punjabi University, Patiala.

10. Koshal, Rajesh Kumar. Materials analysis using X-ray fluorescence technique employing alpha induced windowless X-ray Si (Li) detector system. Kurukshetra.

11. Mathew, Bobby. Studies on ionospheric scintillations. Saurashtra. Dr K N Iyer, Prof, Department of Physics, Saurashtra University, Rajkot.
12. Murajidhar, M. Growth of high Tc (2223) phase in BSCCO superconducting system and influence of Pb, Ag, Ca₂PbO₄ and Ca₂CuO₃. Osmania.
13. Murugesan, R. A study on crystals and molecular structure and biological activity of some antifungal compounds. Anna.
14. Pal, Barnana. Studies on phonon scattering in solids. Calcutta.
15. Poddar, Asok. Studies of the electrical transport and magnetic properties of some high-temperature superconductors. Calcutta.
16. Rajani Kumari, K. Studies on dielectric properties of yeast cells by dielectrophoresis. Osmania.
17. Rajput, Renuka. Thermoelectric power of BSCCO superconductors: Temperature variation and percolation aspect. JNU. Prof Deepak Kumar, Head, School of Physical Sciences, Jawaharlal Nehru University, New Delhi.
18. Rama Chary, C. Lattice dynamics of some complex ionic crystals. Osmania.
19. Roychaudhuri, Parangama. Phase transitions in frustrated quantum systems. Calcutta.
20. Saini, Ghan Shyam Singh. Resonance Raman studies on photo-oxidation of some porphyrins and metalloporphyrins. NEHU. Dr A L Verma, Department of Physics, North-Eastern Hill University, Shillong.
21. Shah, P C. Optical studies of crystal surfaces growth, micro hardness and reactivity of large bismuth crystals. Saurashtra. Dr B S Shah, Prof, Department of Physics, Saurashtra University, Rajkot.
22. Siva Prasad, P. Studies on two-line resolution by apodised optical systems in coherent light. Osmania.
23. Somaiah, T. Influence of calcium to copper ratio on superconducting properties of Bi-Pb-Ca-Sr-Cu-O materials. Osmania.
24. Subbaravamma, Koka. Fluctuations in type-II superconductors and related problems. Hyderabad. Prof K N Shrivastava, School of Physics, University of Hyderabad, Hyderabad.
25. Subramanian, R. Structural diagnosis of some mixed ligand copper (II) complexes using ESR, electronic and IR spectral techniques. Osmania.
26. Thakur, Dipti Bala. Studies on photo conducting properties of some II-VI compounds. Ravishankar. Dr Shashi Bhushan, Reader, School of Studies in Physics, Pt Ravishankar Shukla University, Raipur.
27. Viswanath, R N. Synthesis and study of molybdenum chalcogenide and high Tc superconducting oxide compounds. Madras. Chemistry.
4. Bapodara, A H. Studies on some compounds of medicinal interest. Saurashtra. Dr (Smt) H H Parekh, Reader, Department of Chemistry, Saurashtra University, Rajkot.
5. Basu, Prasenjit. Studies on natural products and heterocyclic compounds. Calcutta.
6. Baxi, G A. Studies on natural and synthetic drugs. Saurashtra. Dr A R Parikh, Prof and Head, Department of Chemistry, Saurashtra University, Rajkot.
7. Bhaskara Rao, N. Total synthesis of the cyclodepsi peptides, jaspamide and geo-diamolide - D. Osmania.
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12. Dash, Sasmita. Thermal annealing and thermal decomposition of irradiated inorganic salts. Calicut. Dr S M K Nair, Department of Chemistry, University of Calicut, Calicut.
13. Deb, Alok K. Synthesis, structural assessment and studies of reactivity of 2-(aryloxo) of pyridine complexes of ruthenium, rhodium and silver. NEHU. Dr S Goswami, Department of Chemistry, North-Eastern Hill University, Shillong.
14. Deshmukh, Sujata Shishupal. Cyclization-reactions. Nagpur. Dr (ku) Shubhra Banerjee, Department of Chemistry, Institute of Science, Nagpur.
15. Devasagayaram, A. New routes to metal carbonyl reagents: Investigations on the synthesis and reactivities of metal carbonyls containing metal-metal bond. Hyderabad. Dr M Periasamy, Reader, School of Chemistry, University of Hyderabad, Hyderabad.
16. Doifode, Shamla Keshaorao. Synthesis of nitrogen/oxygen heterocycles: Study of aurones, aurone dibromides, aurone epoxides and quinoxalines. Amravati. Dr B J Ghiya, Reader, Department of Organic Chemistry, Institute of Science, Nagpur and Dr A G Doshi, Lecturer, Department of Chemistry, Vidya Bharti Mahavidyalaya, Amravati.
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3. Balaji, R. New polymerization processes: Polymerization of 4-methyl-pentene-1 by Ziegler-Natta catalysts. Madras.

20. Hari Babu, Bodepudi. Chemical investigations on marine organisms: Steroids and diterpenoids of some soft corals of the Andaman and Nicobar islands. Andhra.
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37. Ravi Kumar, Y. Electrochemical studies of some nitrogen heterocyclic carboxylic acids at mercury cathode. Osmania.
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39. Roychowdhuri, Amal Kumar. Chemical synthesis of humic acids and study of their physico-chemical properties. Calcutta.
40. Sahu, Sabita Kumari. Mechanisms of peroxide reactions: A kinetic study. Berhampur. Dr R S Panda, Reader, Department of Chemistry, Vikramdev College, Jeypore, Orissa.
41. Sankaranarayanan, T S N. Studies on the influence of detergent type amines and their dithiocarbamates on zinc phosphate coatings on mild steel. Madras.
42. Sarkar, Asamanja. Separation of heavy metals. NBU.
43. Saxena, Purti. Synthesis and structural studies of some mixed ligands nitrosyl complexes of first row transition metals-chromium and iron. Bundelkhand. Dr R C Maurya, Department of Chemistry, Rani Durgawati Vishwavidyalaya, Jabalpur.
44. Shanmugasundaram, S. Studies in alkaloid chemistry. Madras.
45. Sharma, Anil Kumar. Thermodynamic and transport studies of some solutions involving mannitol and glycerol. HP.
46. Shrinivas Rao, R. Kinetic and mechanism of redox processes involving Ru (III) as catalyst. Bundelkhand. Dr R K Shukla, Atarra College, Atarra.
47. Shivakumar, B. Synthesis and liquid crystalline behaviour of some chiral aromatic compounds. Bangalore. Dr B K Sadashiva, Liquid Crystal Laboratory, Raman Research Institute, Bangalore.
48. Singh, Harishankar. Studies on mixed ligand N-aryl complexes of MnO: Electronic configuration. Bundelkhand. Dr R K Shukla, Atarra College, Atarra.
49. Singh, Laishram Nandababu. Thermochemistry of some metal complexes. Manipur. Dr S Mitra, Assoc Prof, Department of Chemistry, Manipur University, Imphal.
50. Singh, Satyendra Pal. Dipolar cycloaddition reaction in organic synthesis. Dibrugarh. Dr J S Sandhu, Head, Department of Drugs and Pharmaceutical Chemistry, Regional Research Laboratory, Jorhat and Dr S R Sen, Reader, Department of Chemistry, Dibrugarh University, Dibrugarh.
51. Singh, Thokchom Raghumani. Studies on surfactant mediated chemical reactions and applicability of enzyme catalysis models. Manipur. Dr S K Srivastava, Department of Chemistry, Manipur University, Imphal.
52. Somanathan, N. Physico-chemical studies on casein films. Madras.
53. Srinivas, Bhamidi. Homo and hetero dinuclear transition metal complexes: Synthesis, spectral, magnetic, electrochemical and catalytic investigations. Hyderabad. Prof P S Zacharias, School of Chemistry, University of Hyderabad, Hyderabad.
54. Subramanian, V S. Studies on the preparation and applications of metal-oxide impregnated silica-alumina catalysts. Anna.
55. Sukumar, E. Studies on the chemistry and biological activities of plant products. Madras.

56. Tarat, Swagata. Studies on biological activity of amide group ligands and their complexation characteristics. Calcutta.

57. Thambidurai, S. A study on the chemical modifications of the ring and rotor spun cotton yarns. Anna.

58. Udaya Bhaskar, M. Chemical constituents of *Coelogyne ochracea* Ldl and DDQ oxidation of 9,10-dihydrophenanthropyrans. Nagarjuna.

59. Varkey, George. Surface characterisation and corrosion inhibition of mild steel by certain antibiotics in acid medium. Delhi.

60. Vijayalakshmi, V. Synthesis, characterisation and evaluation of novel acrylic monomers and their polymers. Osmania.

Earth Sciences

1. Abdulrahim. Geology, mineralogy and controls of sulphide mineralisation in the Kalyadi Copper Mine, Hassan District, Karnataka State, India and their bearing on future exploration for concealed ore extension. Gulbarga. Prof N Ramana Rao, Department of Geology, Osmania University, Hyderabad.

2. Chakrabarti, Narayan Chandra. Coalification trends in Indian coals. ISM. Prof D Chandra, Department of Electronics and Instrumentation, Indian School of Mines, Dhanbad and Dr N D Mitra, Geological Survey of India, Calcutta.

3. Dutta, Amarendra. Trace element geochemistry of coal and associated sediments of Raniganj Coalfield and its effects on the environment. ISM. Prof D Chandra, Department of Electronics and Instrumentation, Indian School of Mines, Dhanbad.

4. Kapley, Ramakant Dinkar. Petrography and petrochemistry of dyke swarm in Garchiroli District, Maharashtra. Nagpur. Dr N K Mohabey, Reader and Head, Department of Geology, Nagpur University, Nagpur.

5. Krishna Reddy, K. Studies on the alkaline and associated rocks of Uppalapadu, Prakasam District, A P. Osmania.

6. Moitra, Ajoy Kumar. Biostratigraphy study of stromatolites and microfossils from the proterozoic Chhattisgarh Basin, M P, India. ISM. Prof D Chandra, Department of Electronics and Instrumentation, Indian School of Mines, Dhanbad and Dr D P Dhondial, Geological Survey of India, Calcutta.

7. Pal, Dalim Kumar. Magma genesis in the mantle and precambrian crustal evolution. D Sc. Calcutta.

8. Ramachandran, K K. Texture, composition and provenance of innershell sediments between Narakkal and Purakkad, Kerala with special reference to the formation of Mud Banks. CUST Dr P Seralathan, Lecturer, School of Marine Sciences, Cochin University of Science and Technology, Kochi.

9. Sharma, Mithilesh. Revision of the systematics of rhynchonellid brachiopods from the marine Jurassic formations of Rajasthan. ISM. Dr D N Ghosh, Assoc Prof, Department of Applied Geology, Indian School of Mines, Dhanbad.

10. Sharma, Vijay Kumar. Petrological and geochemical study of Kal Nala granite, South East of Thathri Dodra District, Jammu Himalaya. Jammu. Dr B L Dhar, Reader, Department of Geology,

University of Jammu, Jammu and Dr Y P Gupta, Reader, Department of Geology, University of Jammu, Jammu.

11. Sivaji, Chadaram. Mapping of the crustal discontinuities over the Central Indian region from gravity field data. ISM. Dr B N P Agarwal, Asstt Prof, Department of Applied Geophysics, Indian School of Mines, Dhanbad.

12. Srimannarayana, Tummala. Some agro climatic studies of Madhya Pradesh, India. Andhra.

13. Thakkar, Brijlal Odhavaji. Environmental geology and resource development with reference to area around Ballarshah, Chandrapur District, Maharashtra. Nagpur. Dr Y G Dekate, Ex-Head, Department of Geology, Nagpur University, Nagpur and Dr N K Mohabey, Reader and Head, Department of Geology, Nagpur University, Nagpur.

Engineering & Technology

1. Abdulla Jabar Hussain. Thermal effects in non-circular bearings. IIT Delhi. Prof S Biswas, Industrial Tribology, Machine Dynamics and Maintenance Engineering Centre, Indian Institute of Technology, New Delhi and Dr K Athre, Department of Mechanical Engineering, Indian Institute of Technology, New Delhi.

2. Afshar, Nasser Rostam. Flow past spillway aerators. Roorkee.

3. Afshari, Houshang. Longitudinal dispersion in meandering channels. Roorkee.

4. Baqi, Abdul. The study of prestressed masonry flexural elements. Roorkee.

5. Chaudhuri, Sibabrata. A portable thermal diffusion cloud nucleus counter. Calcutta.

6. Debgupta, Ajaykumar. Studies of atmospheric water vapour content and rain attenuation over Calcutta from radiometric measurements at 22.235 GHz. Calcutta.

7. Gupta, Akhilesh. Investigation of pool boiling heat transfer from tube bundles in cross-flow. Roorkee.

8. Muqtadar, Syed Abdul. Development and characterization of ceria-stabilized zirconias and study of their physico-chemical behaviour. Osmania.

9. Nasipuri, Rita. Some studies on high magnesium portland cement. Calcutta.

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12. Singh, S K. Studies of heat transfer during condensation of steam on an array of horizontal low integral-fin tubes. Roorkee.

13. Som, Pranab Kumar. Studies of vinyl polymerization by some internal ketoinmino compounds as initiator. Calcutta.

14. Srivastava, S P. Design and performance investigations on static converter fed synchronous motor drive. Roorkee.

✓15. Yashoda, K P. Chemical changes during the salt curing of mackerel. Mysore. Dr S V Suryanarayana Rao.

ADMISSION NOTICE

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An autonomous institution of the Ministry of Welfare, Govt. of India, invites applications for admission to the following courses commencing from June 1993.

1) **B.Sc. (Audiology & Speech Rehabilitation) Three Years** affiliated to Bombay University and conducted at AYJNIHH, Bombay.
Eligibility : Passed 12th class examination under 10 + 2 system or equivalent examination with English, any other modern Indian language, Physics, Chemistry, Biology and any other subject.

B.Sc. (Hearing, Language & Speech) : Three Years affiliated to Osmania University and conducted at Hyderabad.

Eligibility : Passed 12th class examination under 10 + 2 system or equivalent with Physics, Chemistry, Biology or Physics, Chemistry, Maths.

Proposed to start at Delhi and Calcutta subject to approval of local universities.

Eligibility : Passed 12th class examination under 10 + 2 system or equivalent with PCB or PCM subjects.

(For Osmania University course entrance test will be held.)

ii) **B.Ed. (Deaf) at Bombay; B.Ed. (IHH) at Calcutta and B.Spl. Ed. at Hyderabad : One Year** programme under affiliation to Universities of Bombay, Calcutta and Osmania respectively.

Eligibility : Degree in any discipline.

(For Osmania University course entrance test will be held.)

iii) **Diploma in Communication Disorders (DCD) : One Year** Programme conducted at Delhi.

Eligibility : Passed 12th class examination under 10 + 2 system or equivalent with science subjects.

iv) **Diploma in Education of Hearing Impaired (H.I.) : One year** conducted at New Delhi, Calcutta, Hyderabad, Valakom, Allahabad (subject to continuation), Bhubaneswar, Bangalore, Madras, Indore and Shillong (Proposed).

Eligibility : Passed 12th class examination under 10 + 2 system or equivalent in any discipline.

v) **M.Sc. (Audiology & Speech Rehabilitation) : Two Years** under affiliation to University of Bombay at NIHH subject to clearance of University.

Eligibility : B.Sc. in Audiology and Speech Therapy or equivalent examination.

vi) **M.Ed. (H.I.) : One year** under affiliation to Bombay University at NIHH Bombay subject to clearance from University.

Eligibility : At least IInd class in B.Ed. (Deaf) or B.Ed. with D.Ed. (Deaf) with 2 years experience in teaching the deaf. Age not exceeding 40 years.

Prospectus and prescribed application form can be obtained from Academic Cell, AYJNIHH, Bombay at the above address by post or in person on payment of Rs. 30/- by crossed Demand Draft only (Rs. 20/- in case of SC/ST on production of certificate from competent authority) drawn in favour of "THE DIRECTOR, AYJNIHH" payable at Bombay and a self addressed envelope (if requested by post) of the size 23 cms. x 16 cms. with postage stamp of Rs. 7/- affixed thereon. To obtain application form in person contact Academic Cell on any working day (Monday to Friday) from 9.00 a.m. to 1.00 p.m. and from 2.00 p.m. to 5.30 p.m. [CASH, IPO, CHEQUE will not be accepted.]

Last date for issue of application is 30th April 1993. Last date for receipt of application complete in all respects including enclosing of Medical Certificate of fitness from the Civil Surgeon declaring the state of health is 10th May, 1993.

Candidates applying for B.Sc. (ASR)/M.Sc. (ASR)/M.Ed. (H.I.) course and appearing in qualifying examinations in April/May 1993 should also apply within the last date, however they are allowed to submit their marks before 11th June, 1993 for B.Sc. and 9th July, 1993 for post graduate courses.

Eligible candidates will be called for Test/interview for which no TA/DA is admissible.

Applications not accompanied with required certificates or incomplete and received after the last date will not be considered.

Seats are reserved for SC/ST/DTNI/OBC, as per government rules. Seats are also reserved for the candidates from SARC countries. While sending the request for application form, it should be clearly written on the top of the envelope the following : "Request for Prospectus & Application form".

CLASSIFIED ADVERTISEMENTS

PANJAB UNIVERSITY CHANDIGARH

Advertisement No. 3/93

Applications are invited for the post of Registrar in the grade of Rs 4500-6700 + Rs 300/- p.m. as Special pay + allowances with free unfurnished accommodation so as to reach the Secretary to Vice-Chancellor, Panjab University, Chandigarh by April 30, 1993 under Registered cover. The appointment is substantive and the term of office, in the first instance, shall be for a period of four years.

Application Form along with 'Detailed Instructions' can be had from the Cashier, Panjab University, Chandigarh personally on payment of Rs 15/- or by making a written request under registered cover to the Deputy Registrar (Estt), Panjab University, Chandigarh accompanied with a self-addressed stamped (worth Rs 6.00) envelope of 23 x 10 cms and a Bank draft of Rs 15/- drawn in favour of the Registrar, Panjab University, Chandigarh.

Society of Pilar
Fr. Agnel College of Arts
& Commerce
Pilar, Goa 403 203.

Applications are invited, with full bio-data, for the following posts, so as to reach the CHAIRMAN, within 15 days from the date of publication of this advertisement :

1) PRINCIPAL :

Minimum requirements : Minimum ten years of approved teaching experience as lecturer at undergraduate/post-graduate level;

Scale of pay : Rs. 3700-125-4700-150-5300-200-5700 plus admissible allowances as per Goa Government rules.

Date of joining : 20th June, 1993.

Applications should contain the following information :

Full name, Date of birth, Designation of the post held, Academic qualifications, Teaching and Administrative Experience, list of papers written/read in the Seminar/Conferences etc., Copies of statements of marks secured at SSC,

Intermediate/HSSC, BA/BSc/B.Com, MA/M.Com examinations.

ii) Xerox copy of any higher degree secured.

iii) Certified copy of the approval granted by the University at the time of appointment in the affiliated colleges.

iv) Experience Certificate.

2) LECTURERS

1. Accountancy one & Financial Manag./ Commerce	Full time/ Part time
2. Business law one	lecture basis
3. Commercial Geography one	full time/ part time.
4. Economics one	full time
5. History one	lecture basis
6. Hindi one	part time
7. Konkni one	part time
8. Mathematics/ Statistics one	part time
9. Political Science one	lecture basis
10. Sociology one	lecture basis

11. Librarian one full time.

Academic qualifications : (i) Master's Degree in the relevant subject (i.e. minimum 6 papers), with at least 55% marks or its equivalent grade. (ii) Good academic record (i.e. at least 50% marks in the graduation examination, with subject applied for or an average of 50% marks at the three exams prior to master's degree i.e. SSC, HSSC and graduation taken together) and (iii) candidates should have cleared the eligibility test for lecturers conducted by UGC/CSIR or similar tests accredited by UGC. In case candidates having passed the said eligibility test are not available, candidates fulfilling other conditions would be appointed on purely temporary basis.

Scale of pay : Rs. 2200-75-2800-100-4000 plus other admissible allowances and benefits as per the rules of Goa University/Goa Government.

Persons who are already employed should send their applications through proper channels. Break in service, if any, should be accounted for.

Interested persons should apply giving full details of academic qualifications from SSC onwards clearly indicating the subject offered, marks scored and class/divisions obtained at all public examinations, teaching experience address, date of birth etc. True copies of statements of marks of all public examinations passed should be enclosed.

Purvanchal University, Jaunpur

Deptt of Business Management

MBA Admission Test, 1993

MBA Admission Test, 1993 will be held on April 11, 1993 (instead of March 28, 1993 as notified earlier) at the following centres:

1. T D College, Jaunpur
2. Deptt of Geology, Lucknow University
3. JVSD Sr Sec Girls School, D-II, Jhandewalan Extn., Karol Bagh, Link Road, New Delhi-110 005

G. S. Mishra
REGISTRAR

BERHAMPUR UNIVERSITY

Bhanja Bihar :

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NO.2611/ADMN (TE) Dated 13.3.1993

SPECIAL DRIVE FOR
RECRUITMENT OF SC/ST

ADVERTISEMENT

Applications are invited from the candidates belonging to SC/ST for the post of a Lecturer for Lingaraj Law College, Berhampur. The prescribed forms can be obtained from the Office of the Berhampur University in person on production of a bank draft drawn on the State Bank of India, Bhanja Bihar branch worth Rs. 50/- (Rupees fifty only) in favour of the Comptroller of Finance, Berhampur University. Those desirous of obtaining them by post may send a bank draft as above along with a self-addressed envelope (22 x 10 cm) with postage stamp worth Rs. 2/- affixed on it.

I. QUALIFICATIONS

(i) LL.M. degree with 55% of marks.

(ii) Candidates having higher qualification including clearance of N.E.T. will be preferred.

II. AGE

The age limit for appointment to the above post shall be the same as applicable to State Government servants. However, the upper age limit may be relaxed by the appointing authority.

III. SCALE OF PAY : Rs. 2200-75-2800-100-4000/-

IV. INSTRUCTIONS

a) Applicants for the above post should submit two copies of the applications duly filled in along with copies of the academic certificates, marklists and publications etc. so as to reach the undersigned on or before 17.4.1993. Applications received beyond the last date will not be entertained.

b) Candidates who are in service should submit their application through proper channel and they are required to produce no objection certificate from their employer at the time of interview.

c) Government servants will not be accepted on deputation on foreign service terms and conditions, if selected. However, those who retain lien with the Government, leave salary and pension contribution may be paid upto a maximum period of two years.

d) Selected candidates will be required to join within one month from the date of issue of the appointment orders, unless otherwise specified or permitted.

e) The university reserves the right to fill up or not to fill up the post and/or to call only selected candidates for interview. Incomplete applications in any manner will be summarily rejected.

f) No correspondence in this regard shall be entertained.

R.N. Mishra
REGISTRAR

SARASWAT VIDYALAYA'S COLLEGE OF COMMERCE AND MANAGEMENT STUDIES, TELANG NAGAR, KHORLIM, MAPUSA GOA - 403 507

WANTED

Applications are invited for the following posts :

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2) Lecturer in Commerce	1 post	Full time	
3) Lecturer in Management	1 post	Full time	
4) Lecturer in Geography	1 post	Full time	(Res.)
5) Lecturer in Mathematics	1 post	Full time	(Res.)
6) Lecturer in Mathematics	1 post	Part time	
7) Lecturer in Business Law	1 post	Part time	
8) Lecturer in Accountancy	1 post	Full time	
9) Lecturer in Accountancy	2 posts	Part time	

Academic Qualifications

For post nos. 1 to 6 : Masters degree in relevant subject (i.e. minimum 6 papers) with at least 55% or its equivalent grade and a good academic record (i.e. at least 50% at the graduation examination with subject applied for or an average of 50% marks at the three exams in SSC, HSSC and graduation taken together).

Candidates should have cleared the eligibility test for lecturers, conducted by UGC, CSIR or similar test accredited by UGC. In case candidates having passed the said eligibility test are not available, candidates fulfilling other conditions would be appointed on purely temporary basis.

For post no. 7 : Masters degree in Law with at least 55% or its equivalent grade and a good academic record.

For post no. 8 & 9 : F.C.A. with B.Com. degree.

Reservation of Posts

Post No. 4 & 5 is reserved for candidates belonging to SC/ST/Denotified tribes/nomadic tribes. If no suitable candidates are available from the RESERVED categories, candidates from general category will be considered for appointment temporarily for one year.

Scale of Pay : Rs. 2200-75-2800-100-4000 plus admissible allowances.

Persons who are already employed shall send their applications through proper channel. Break in service, if any, should be accounted for. Interested candidates should apply giving full details of academic qualifications from S.S.C.E. onwards clearly indicating the subjects offered, marks scored and class/division obtained at all public examinations, teaching experience, address, date of birth, etc.

True copies of marks statements of all public examinations passed should be enclosed.

Applications duly completed in all respects should reach the Principal within 15 days.

Bhaskar G. Nayak
PRINCIPAL

**PANJAB UNIVERSITY
CHANDIGARH**

Advertisement No. 2/93

Applications are invited for the following posts so as to reach the Registrar, Panjab University, Chandigarh by 16-4-1993.

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1. Librarian - 1 Rs. 4500-7300
2. Deputy Librarians - 2 Rs. 3700-5700
3. Assistant Librarians - 11 Rs. 2200-4000
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P.U. Extension Library, Ludhiana

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6. Deputy Librarian - 1 Rs. 3700-5700
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Department of Evening Studies

8. Deputy Librarian - 1 Rs. 3700-5700

Department of Mathematics

9. Deputy Librarian - 1 Rs. 3700-5700

Department of Chemical Engg. & Technology

10. Assistant Librarian - 1 Rs. 2200-4000

Department of Laws

11. Assistant Librarian - 1 Rs. 2200-4000

Department of Pharmaceutical Sciences

12. Assistant Librarian - 1 Rs. 2200-4000

Separate Application form for each post is to be submitted. Application Form along with Detailed Instructions can be had from the Cashier, Panjab University, Chandigarh per-

sonally on payment of Rs 15/- for the posts at Sr. No. 1 to 6 and 8 to 12 and Rs. 10/- for the post at Sr. No. 7 or by making a written request to the Deputy Registrar (Estt), Panjab University, Chandigarh, accompanied with a self addressed stamped (worth Rs. 6.00) envelope of 23 x 10 cms and Bank Draft of Rs. 15/- or Rs. 10/- as the case may be, drawn in favour of the Registrar, Panjab University, Chandigarh-160014.

**Indian Institute of Advanced Study
Rashtrapati Nivas, Shimla- 171005**

ADVERTISEMENT NO. 2/93

Applications are invited for the post of Stenographer (English) in the scale of pay of Rs. 1400-40-1600-50-2300-EB-2600 from candidates belonging to Scheduled Caste community having following qualifications:

1. **QUALIFICATIONS:** Bachelor's degree from a recognised Indian University with a minimum shorthand and typing speed of 100/40 w.p.m. respectively.
2. **AGE LIMIT:** 18 to 28 years
3. **THE POST IS TEMPORARY** but likely to continue. It carries all such allowances as are admissible to Central Government employees stationed at Shimla. Applications on plain paper giving name, date of birth, address, educational qualifications and experience and other relevant particulars supported by attested copies of certificates and testimonials should reach the Dy. Secretary (Admn.), Indian Institute of Advanced Study, Rashtrapati Nivas, Shimla-171005 within fifteen days from the date of publication of this advertisement. A certificate from the competent authority that the candidate belongs to Scheduled Caste community should also be enclosed. Candidates already in service must apply through proper channel.

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M.Sc. (Medical Entomology)
ADMISSION NOTICE - 1993-94

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(Indian Council of Medical Research)
PONDICHERRY

Applications are invited for admission to 2 year M.Sc. (Medical Entomology) course affiliated to the Pondicherry University. Out of 12 available seats, 6 will be filled by open competition. Such candidates will be paid a stipend of Rs. 800/- p.m. Three seats will be filled from among in-service candidates from State Governments and other institutes and three from among foreign nominees of WHO/Govt. of India.

Qualification : B.Sc. with Zoology or Biology as one of the subjects or M.B.B.S. or B.V.Sc. or B.Sc. MLT (I Class for Open General; II Class for SC/ST; Class not insisted for nominated candidates, subject to their clearing the screening test).

Application form and prospectus can be had from "The Director, Vector Control Research Centre, Pondicherry-605 006" on or before 10th June 1993 on payment of Rs. 25/- by a Demand Draft drawn in favour of the "Director, Vector Control Research Centre", payable at Pondicherry. Last date of receipt of completed application is 21st June, 1993. Entrance test will be held on 18th July 1993 at Pondicherry.

DIRECTOR

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INDIAN COUNCIL OF AGRICULTURAL RESEARCH

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Candidates shall be required to submit the following documents through the Head of the Institute from where the thesis has been obtained.

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- (3) 6 copies of the synopsis indicating precisely and in concise terms the work done by the candidate.
- (4) 6 copies of the bio-data with complete address for correspondence with telegraphic address if possible.

The certificate awarded to the candidate for Ph.D. degree may also be sent. There is no prescribed proforma for applying for this award. Each candidate will be judged on the basis of the originality and the applied value of the investigations as revealed in the thesis submitted by him. In all matters relating to the award the decision of the Council shall be final and no correspondence on this account will be entertained.

Applications, with complete documents as mentioned above, addressed to Shri K.L. Bokolia, Deputy Secretary (B), Indian Council of Agricultural Research, Krishi Bhavan, New Delhi-110001 should be sent so as to reach on or before **15th May'93**. The last date for candidates in the Andaman and Nicobar Islands, Lakshadweep, States/Union Territory in the North Eastern Region, Ladakh Division of J&K State and Sikkim is **31st May, 1993**. The award winning thesis will be retained by the Council for record. In case the application is not accompanied by a copy of thesis and the required number of synopsis and bio-data the application is liable to be rejected at the screening stage.

Inter-University National Youth Festival



Bharathnatyam by Devi Ahilya Viswavidyalaya



Kathak by Punjabi University



Informal get-together

